

Ohio: 2002

Issued December 2004

EC02TCF-OH

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	494 278	100.0	546 095	100.0	127 152	100.0	403
Single modes	421 855	85.3	517 685	94.8	115 000	90.4	198
Truck ²	377 110	76.3	387 982	71.0	68 483	53.9	178
For-hire truck	264 450	53.5	230 199	42.2	56 731	44.6	394
Private truck	112 056	22.7	157 543	28.8	11 590	9.1	71
Rail	33 146	6.7	72 295	13.2	35 823	28.2	783
Water	1 082	.2	24 486	4.5	8 274	6.5	273
Shallow draft	927	.2	19 635	3.6	7 880	6.2	351
Great Lakes	S	S	S	S	S	S	106
Deep draft	S	S	S	S	S	S	S
Air (includes truck and air)	3 453	.7	124	—	173	.1	1 189
Pipeline ³	7 065	1.4	32 798	6.0	S	S	S
Multiple modes	50 796	10.3	7 203	1.3	6 841	5.4	664
Parcel, U.S. Postal Service or courier	46 468	9.4	1 642	.3	1 050	.8	663
Truck and rail	4 195	.8	1 733	.3	3 404	2.7	1 698
Truck and water	8	—	1	—	3	—	5 380
Rail and water	S	S	S	S	S	S	380
Other multiple modes	S	S	S	S	S	S	S
Other and unknown modes	21 627	4.4	21 207	3.9	5 312	4.2	139

— 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	85.3	84.0	94.8	93.5	90.4	91.0
Truck ²	76.3	76.8	71.0	77.9	53.9	57.2
For-hire truck	53.5	54.5	42.2	39.0	44.6	43.6
Private truck	22.7	21.8	28.8	37.5	9.1	12.9
Rail	6.7	4.7	13.2	9.6	28.2	28.8
Water .....	.2	.3	4.5	1.9	6.5	4.1
Shallow draft .....	.2	.3	3.6	1.4	6.2	4.1
Great Lakes	S	S	S	S	S	S
Deep draft	S	S	S	S	S	S
Air (includes truck and air) .....	.7	1.0	—	—	.1	.2
Pipeline ³	1.4	1.1	6.0	4.0	S	S
Multiple modes	10.3	11.9	1.3	1.9	5.4	5.4
Parcel, U.S. Postal Service or courier	9.4	9.7	.3	.3	.8	.8
Truck and rail .....	.8	2.1	.3	.4	2.7	3.0
Truck and water	—	—	—	—	—	—
Rail and water	S	S	S	S	S	S
Other multiple modes	S	.2	S	1.0	S	1.2
Other and unknown modes	4.4	4.1	3.9	4.6	4.2	3.6

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

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

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

³Estimates for pipeline exclude shipments of crude petroleum.

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

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

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

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

Mode of transportation ¹	Ton-miles ²		Average miles per shipment
	2002 (millions)	Percent	
Total	127 152	100.0	403
Truck	68 483	53.9	178
Rail	35 823	28.2	783
Shallow draft	7 880	6.2	351
Great Lakes	S	S	106
Deep draft	S	S	S
Air	173	.1	1 189
Parcel, U.S. Postal Service or courier	2 247	1.8	25
Pipeline ³	S	S	S
Other and unknown modes	5 312	4.2	139

– 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	494 278	100.0	546 095	100.0	127 152	100.0
Less than 50 miles	117 893	23.9	271 079	49.6	5 760	4.5
50 to 99 miles	56 439	11.4	63 864	11.7	5 956	4.7
100 to 249 miles	99 858	20.2	85 279	15.6	17 891	14.1
250 to 499 miles	103 457	20.9	81 142	14.9	41 885	32.9
500 to 749 miles	45 650	9.2	20 290	3.7	17 011	13.4
750 to 999 miles	28 239	5.7	9 489	1.7	10 790	8.5
1,000 to 1,499 miles	16 878	3.4	7 668	1.4	10 812	8.5
1,500 to 1,999 miles	13 085	2.6	4 494	.8	10 244	8.1
2,000 miles or more	12 779	2.6	2 790	.5	6 803	5.4
Single modes	421 855	100.0	517 685	100.0	115 000	100.0
Less than 50 miles	96 357	22.8	257 870	49.8	5 503	4.8
50 to 99 miles	52 726	12.5	63 063	12.2	5 885	5.1
100 to 249 miles	90 690	21.5	79 441	15.3	16 169	14.1
250 to 499 miles	89 002	21.1	78 098	15.1	40 484	35.2
500 to 749 miles	36 144	8.6	19 027	3.7	16 082	14.0
750 to 999 miles	23 655	5.6	8 060	1.6	8 754	7.6
1,000 to 1,499 miles	14 482	3.4	6 458	1.2	9 127	7.9
1,500 to 1,999 miles	8 466	2.0	3 228	.6	7 083	6.2
2,000 miles or more	10 334	2.4	2 440	.5	5 912	5.1
Truck³	377 110	100.0	387 982	100.0	68 483	100.0
Less than 50 miles	90 633	24.0	219 486	56.6	4 704	6.9
50 to 99 miles	50 425	13.4	45 901	11.8	4 104	6.0
100 to 249 miles	84 948	22.5	50 764	13.1	9 809	14.3
250 to 499 miles	76 157	20.2	45 100	11.6	18 955	27.7
500 to 749 miles	32 327	8.6	12 301	3.2	8 659	12.6
750 to 999 miles	14 596	3.9	5 356	1.4	5 520	8.1
1,000 to 1,499 miles	11 877	3.1	4 272	1.1	5 925	8.7
1,500 to 1,999 miles	7 204	1.9	2 654	.7	5 665	8.3
2,000 miles or more	8 941	2.4	2 147	.6	5 143	7.5
For-hire truck	264 450	100.0	230 199	100.0	56 731	100.0
Less than 50 miles	35 728	13.5	104 929	45.6	2 559	4.5
50 to 99 miles	31 020	11.7	24 980	10.9	2 327	4.1
100 to 249 miles	65 078	24.6	35 867	15.6	7 073	12.5
250 to 499 miles	67 065	25.4	40 221	17.5	16 757	29.5
500 to 749 miles	27 289	10.3	11 169	4.9	7 869	13.9
750 to 999 miles	13 685	5.2	4 889	2.1	5 046	8.9
1,000 to 1,499 miles	10 462	4.0	3 787	1.6	5 284	9.3
1,500 to 1,999 miles	6 117	2.3	2 350	1.0	5 003	8.8
2,000 miles or more	8 003	3.0	2 008	.9	4 815	8.5
Private truck	112 056	100.0	157 543	100.0	11 590	100.0
Less than 50 miles	54 879	49.0	114 520	72.7	2 143	18.5
50 to 99 miles	19 388	17.3	20 908	13.3	1 776	15.3
100 to 249 miles	19 777	17.6	14 850	9.4	2 725	23.5
250 to 499 miles	8 831	7.9	4 813	3.1	2 165	18.7
500 to 749 miles	4 960	4.4	1 108	.7	774	6.7
750 to 999 miles	901	.8	465	.3	472	4.1
1,000 to 1,499 miles	1 384	1.2	470	.3	619	5.3
1,500 to 1,999 miles	1 012	.9	276	.2	601	5.2
2,000 miles or more	S	S	134	—	315	2.7
Rail	33 146	100.0	72 295	100.0	35 823	100.0
Less than 50 miles	2 244	6.8	S	S	411	1.1
50 to 99 miles	294	.9	1 419	2.0	188	.5
100 to 249 miles	3 370	10.2	13 713	19.0	3 294	9.2
250 to 499 miles	S	S	S	S	S	S
500 to 749 miles	2 937	8.9	2 715	3.8	2 260	6.3
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	2 232	6.7	2 183	3.0	3 197	8.9
1,500 to 1,999 miles	654	2.0	567	.8	1 403	3.9
2,000 miles or more	961	2.9	268	.4	698	1.9
Water	1 082	100.0	24 486	100.0	8 274	100.0
Less than 50 miles	226	20.8	5 795	23.7	164	2.0
50 to 99 miles	S	S	8 820	36.0	S	S
100 to 249 miles	154	14.2	5 868	24.0	1 877	22.7
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	537	49.6	4 003	16.3	5 155	62.3
750 to 999 miles	—	—	—	—	—	—
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—
Shallow draft	927	100.0	19 635	100.0	7 880	100.0
Less than 50 miles	103	11.1	4 706	24.0	S	S
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	152	16.4	5 401	27.5	1 795	22.8
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	537	57.9	4 003	20.4	5 155	65.4
750 to 999 miles	—	—	—	—	—	—
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—

See footnotes at end of table.

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

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

Mode of transportation and distance shipped ¹ (based on Great Circle Distance)	Value		Tons		Ton-miles ²	
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent
Single modes—Con.						
Great Lakes	S	S	S	S	S	S
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	—	—	—	—	—	—
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—
Deep draft	S	S	S	S	S	S
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	—	—	—	—	—	—
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—
Air (includes truck and air)	3 453	100.0	124	100.0	173	100.0
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	311	9.0	S	S	S	S
250 to 499 miles	1 091	31.6	51	41.1	25	14.6
500 to 749 miles	342	9.9	8	6.6	8	4.4
750 to 999 miles	224	6.5	S	S	S	S
1,000 to 1,499 miles	S	S	3	2.6	5	3.0
1,500 to 1,999 miles	608	17.6	S	S	S	S
2,000 miles or more	432	12.5	S	S	S	S
Pipeline⁴	7 065	100.0	32 798	100.0	S	S
Less than 50 miles	3 254	46.1	16 035	48.9	S	S
50 to 99 miles	S	S	6 922	21.1	S	S
100 to 249 miles	1 907	27.0	9 081	27.7	S	S
250 to 499 miles	S	S	S	S	S	S
500 to 749 miles	—	—	—	—	S	S
750 to 999 miles	—	—	—	—	S	S
1,000 to 1,499 miles	—	—	—	—	S	S
1,500 to 1,999 miles	—	—	—	—	S	S
2,000 miles or more	—	—	—	—	S	S
Multiple modes	50 796	100.0	7 203	100.0	6 841	100.0
Less than 50 miles	4 588	9.0	150	2.1	4	—
50 to 99 miles	3 358	6.6	113	3.6	10	.1
100 to 249 miles	8 128	16.0	S	S	S	S
250 to 499 miles	12 537	24.7	627	8.7	315	4.6
500 to 749 miles	9 022	17.8	376	5.2	280	4.1
750 to 999 miles	4 371	8.6	S	S	S	S
1,000 to 1,499 miles	2 145	4.2	154	2.1	221	3.2
1,500 to 1,999 miles	4 289	8.4	1 037	14.4	2 670	39.0
2,000 miles or more	2 358	4.6	178	2.5	454	6.6
Parcel, U.S. Postal Service or courier	46 468	100.0	1 642	100.0	1 050	100.0
Less than 50 miles	4 565	9.8	147	8.9	4	.4
50 to 99 miles	3 358	7.2	113	6.9	10	1.0
100 to 249 miles	7 719	16.6	358	21.8	82	7.8
250 to 499 miles	11 836	25.5	405	24.6	185	17.6
500 to 749 miles	8 575	18.5	270	16.4	191	18.2
750 to 999 miles	3 929	8.5	135	8.2	137	13.0
1,000 to 1,499 miles	1 595	3.4	51	3.1	68	6.4
1,500 to 1,999 miles	2 932	6.3	107	6.5	236	22.4
2,000 miles or more	1 959	4.2	56	3.4	139	13.2
Truck and rail	4 195	100.0	1 733	100.0	3 404	100.0
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	S	S	S	S	128	3.8
500 to 749 miles	447	10.7	106	6.1	89	2.6
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	1 357	32.4	S	S	S	S
2,000 miles or more	S	S	S	S	S	S
Truck and water	8	100.0	1	100.0	3	100.0
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	—	—	—	—	—	—
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	S	S	S	S	3	98.9

See footnotes at end of table.

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

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

Mode of transportation and distance shipped ¹ (based on Great Circle Distance)	Value		Tons		Ton-miles ²	
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent
Multiple modes—Con.						
Rail and water	S	S	S	S	S	S
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	—	—	—	—	—	—
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	S	S	S	S	S	S
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—
Other and unknown modes	21 627	100.0	21 207	100.0	5 312	100.0
Less than 50 miles	16 948	78.4	13 060	61.6	253	4.8
50 to 99 miles	355	1.6	688	3.2	61	1.1
100 to 249 miles	1 040	4.8	2 225	10.5	407	7.7
250 to 499 miles	1 919	8.9	2 417	11.4	1 086	20.5
500 to 749 miles	484	2.2	S	S	S	S
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	252	1.2	1 056	5.0	1 463	27.5
1,500 to 1,999 miles	S	S	S	S	S	S
2,000 miles or more	86	.4	S	S	S	S

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

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

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	494 278	100.0	546 095	100.0	127 152	100.0	403
Less than 50 lb	41 131	8.3	1 024	.2	460	.4	480
50 to 99 lb	13 701	2.8	809	.1	246	.2	308
100 to 499 lb	39 040	7.9	4 624	.8	1 271	1.0	280
500 to 749 lb	14 368	2.9	2 530	.5	654	.5	266
750 to 999 lb	9 545	1.9	2 088	.4	547	.4	256
1,000 to 9,999 lb	114 219	23.1	38 692	7.1	12 174	9.6	309
10,000 to 49,999 lb	202 161	40.9	246 353	45.1	51 933	40.8	221
50,000 to 99,999 lb	22 831	4.6	89 044	16.3	7 176	5.6	76
100,000 lb or more	37 281	7.5	160 931	29.5	52 690	41.4	351
Single modes	421 855	100.0	517 685	100.0	115 000	100.0	198
Less than 50 lb	11 044	2.6	361	—	62	—	160
50 to 99 lb	6 473	1.5	481	—	66	—	138
100 to 499 lb	28 832	6.8	3 869	.7	930	.8	230
500 to 749 lb	12 140	2.9	2 328	.4	520	.5	226
750 to 999 lb	9 104	2.2	1 992	.4	523	.5	257
1,000 to 9,999 lb	101 146	24.0	32 172	6.2	9 142	7.9	267
10,000 to 49,999 lb	194 354	46.1	242 026	46.8	48 498	42.2	212
50,000 to 99,999 lb	21 887	5.2	80 066	15.5	6 433	5.6	75
100,000 lb or more	36 877	8.7	154 390	29.8	48 825	42.5	343
Truck²	377 110	100.0	387 982	100.0	68 483	100.0	178
Less than 50 lb	9 812	2.6	351	—	50	—	118
50 to 99 lb	5 773	1.5	475	.1	59	—	124
100 to 499 lb	28 202	7.5	3 853	1.0	914	1.3	226
500 to 749 lb	11 683	3.1	2 322	.6	508	.7	221
750 to 999 lb	9 096	2.4	1 992	.5	522	.8	257
1,000 to 9,999 lb	97 434	25.8	31 327	8.1	8 574	12.5	255
10,000 to 49,999 lb	191 745	50.8	239 289	61.7	46 225	67.5	204
50,000 to 99,999 lb	20 697	5.5	78 047	20.1	5 739	8.4	70
100,000 lb or more	2 668	.7	30 327	7.8	S	S	180
For-hire truck	264 450	100.0	230 199	100.0	56 731	100.0	394
Less than 50 lb	2 187	.8	81	—	33	—	412
50 to 99 lb	1 621	.6	86	—	42	—	490
100 to 499 lb	14 282	5.4	1 630	.7	745	1.3	454
500 to 749 lb	6 828	2.6	1 261	.5	435	.8	350
750 to 999 lb	4 255	1.6	1 012	.4	442	.8	433
1,000 to 9,999 lb	63 281	23.9	14 303	6.2	6 463	11.4	437
10,000 to 49,999 lb	154 601	58.5	148 146	64.4	38 875	68.5	288
50,000 to 99,999 lb	S	S	44 835	19.5	4 376	7.7	93
100,000 lb or more	2 350	.9	S	S	S	S	217
Private truck	112 056	100.0	157 543	100.0	11 590	100.0	71
Less than 50 lb	7 613	6.8	271	.2	17	.1	62
50 to 99 lb	4 151	3.7	389	.2	17	.1	43
100 to 499 lb	13 905	12.4	2 222	1.4	169	1.5	78
500 to 749 lb	4 855	4.3	1 061	.7	73	.6	69
750 to 999 lb	4 841	4.3	980	.6	80	.7	80
1,000 to 9,999 lb	34 098	30.4	16 999	10.8	2 104	18.2	118
10,000 to 49,999 lb	36 682	32.7	90 969	57.7	7 255	62.6	79
50,000 to 99,999 lb	5 601	5.0	33 182	21.1	1 318	11.4	39
100,000 lb or more	310	.3	11 471	7.3	557	4.8	82
Rail	33 146	100.0	72 295	100.0	35 823	100.0	783
Less than 50 lb	S	S	S	S	S	S	2 647
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	S	S	S	S	S	S	1 167
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	3 193	9.6	347	.5	516	1.4	1 478
10,000 to 49,999 lb	2 434	7.3	1 964	2.7	2 183	6.1	1 075
50,000 to 99,999 lb	960	2.9	977	1.4	658	1.8	658
100,000 lb or more	S	S	69 007	95.5	32 466	90.6	388
Water	1 082	100.0	24 486	100.0	8 274	100.0	273
Less than 50 lb	S	S	S	S	S	S	5
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	S	S	S	S	S	S	12
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	167
50,000 to 99,999 lb	S	S	S	S	S	S	1 127
100,000 lb or more	1 009	93.2	24 473	99.9	8 261	99.8	378
Shallow draft	927	100.0	19 635	100.0	7 880	100.0	351
Less than 50 lb	S	S	S	S	S	S	5
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	167
50,000 to 99,999 lb	S	S	S	S	S	S	1 127
100,000 lb or more	880	94.9	19 624	99.9	7 866	99.8	402

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	\$	\$	\$	\$	\$	\$	106
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	\$	\$	\$	\$	\$	\$	106
Deep draft	\$	\$	\$	\$	\$	\$	\$
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	\$	\$	\$	\$	\$	\$	12
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	\$	\$	\$	\$	\$	\$	96
Air (includes truck and air)	3 453	100.0	124	100.0	173	100.0	1 189
Less than 50 lb	1 231	35.7	10	7.7	12	6.7	1 192
50 to 99 lb	700	20.3	6	5.0	7	4.2	1 129
100 to 499 lb	604	17.5	15	12.4	16	9.4	999
500 to 749 lb	\$	\$	\$	4.2	\$	\$	2 343
750 to 999 lb	\$	\$	\$	\$	\$	\$	1 314
1,000 to 9,999 lb	404	11.7	29	23.6	41	23.9	1 415
10,000 to 49,999 lb	47	1.4	\$	\$	\$	\$	1 995
50,000 to 99,999 lb	\$	\$	\$	\$	\$	\$	486
100,000 lb or more	—	—	—	—	—	—	—
Pipeline³	7 065	100.0	32 798	100.0	\$	\$	\$
Less than 50 lb	—	—	—	—	\$	\$	\$
50 to 99 lb	—	—	—	—	\$	\$	\$
100 to 499 lb	\$	\$	\$	\$	\$	\$	\$
500 to 749 lb	—	—	—	—	\$	\$	\$
750 to 999 lb	—	—	—	—	\$	\$	\$
1,000 to 9,999 lb	\$	\$	\$	\$	\$	\$	\$
10,000 to 49,999 lb	\$	\$	\$	\$	\$	\$	\$
50,000 to 99,999 lb	\$	\$	\$	\$	\$	\$	\$
100,000 lb or more	6 642	94.0	30 583	93.2	\$	\$	\$
Multiple modes	50 796	100.0	7 203	100.0	6 841	100.0	664
Less than 50 lb	28 474	56.1	596	8.3	395	5.8	671
50 to 99 lb	6 851	13.5	299	4.2	179	2.6	597
100 to 499 lb	8 809	17.3	556	7.7	328	4.8	583
500 to 749 lb	\$	\$	120	1.7	\$	\$	1 086
750 to 999 lb	316	.6	\$	\$	\$	\$	317
1,000 to 9,999 lb	\$	\$	45	.6	\$	\$	\$
10,000 to 49,999 lb	3 156	6.2	1 344	18.7	\$	\$	1 992
50,000 to 99,999 lb	\$	\$	\$	\$	\$	\$	2 203
100,000 lb or more	153	.3	\$	\$	2 701	39.5	1 248
Parcel, U.S. Postal Service or courier	46 468	100.0	1 642	100.0	1 050	100.0	663
Less than 50 lb	28 454	61.2	595	36.3	395	37.6	671
50 to 99 lb	6 851	14.7	299	18.2	179	17.0	597
100 to 499 lb	8 809	19.0	556	33.9	328	31.3	582
500 to 749 lb	\$	\$	120	7.3	\$	\$	1 080
750 to 999 lb	316	.7	\$	\$	\$	\$	317
1,000 to 9,999 lb	\$	\$	\$	\$	\$	\$	109
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—
Truck and rail	4 195	100.0	1 733	100.0	3 404	100.0	1 698
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	—	—	—	—	—	—	—
500 to 749 lb	\$	\$	\$	\$	\$	\$	1 439
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	\$	\$	\$	\$	\$	\$	530
10,000 to 49,999 lb	3 151	75.1	1 342	77.4	\$	\$	1 996
50,000 to 99,999 lb	\$	\$	\$	\$	\$	\$	2 222
100,000 lb or more	\$	\$	\$	\$	\$	\$	2 421
Truck and water	8	100.0	1	100.0	3	100.0	5 380
Less than 50 lb	\$	\$	\$	\$	\$	\$	4 998
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	\$	\$	\$	\$	\$	\$	4 925
500 to 749 lb	\$	\$	\$	\$	\$	\$	8 090
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	\$	\$	\$	\$	\$	\$	5 176
10,000 to 49,999 lb	\$	\$	\$	\$	\$	\$	123
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—

See footnotes at end of table.

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

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

Mode of transportation and shipment weight	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
Multiple modes—Con.							
Rail and water	S	S	S	S	S	S	380
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	380
Other multiple modes	S	S	S	S	S	S	S
Less than 50 lb	S	S	S	S	S	S	58
50 to 99 lb	S	S	S	S	S	S	4
100 to 499 lb	—	—	—	—	—	—	—
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	S	S	S	S	S	S	324
10,000 to 49,999 lb	S	S	S	S	S	S	116
50,000 to 99,999 lb	S	S	S	S	S	S	161
100,000 lb or more	S	S	S	S	S	S	1 774
Other and unknown modes	21 627	100.0	21 207	100.0	5 312	100.0	139
Less than 50 lb	1 614	7.5	67	.3	S	S	S
50 to 99 lb	378	1.7	29	.1	1	—	33
100 to 499 lb	1 399	6.5	199	.9	S	S	S
500 to 749 lb	218	1.0	S	S	S	S	S
750 to 999 lb	S	S	27	.1	2	—	S
1,000 to 9,999 lb	12 584	58.2	6 475	30.5	S	S	486
10,000 to 49,999 lb	4 652	21.5	2 982	14.1	703	13.2	241
50,000 to 99,999 lb	406	1.9	8 833	41.6	417	7.9	S
100,000 lb or more	S	S	2 514	11.9	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	494 278	100.0	546 095	100.0	127 152	100.0	403
01	Live animals and live fish	168	—	179	—	57	—	211
02	Cereal grains	S	S	S	S	S	S	S
03	Other agricultural products	3 110	.6	9 300	1.7	4 799	3.8	468
04	Animal feed and products of animal origin, n.e.c.	2 571	.5	6 696	1.2	2 346	1.8	263
05	Meat, fish, seafood, and their preparations	3 627	.7	1 098	.2	S	S	188
06	Milled grain products and preparations, and bakery products	9 050	1.8	5 433	1.0	3 595	2.8	438
07	Other prepared foodstuffs and fats and oils	16 729	3.4	20 965	3.8	6 851	5.4	S
08	Alcoholic beverages	4 561	.9	6 037	1.1	S	S	S
09	Tobacco products	S	S	S	S	S	S	25
10	Monumental or building stone	S	S	S	S	S	S	30
11	Natural sands	179	—	23 668	4.3	863	.7	35
12	Gravel and crushed stone	534	.1	87 357	16.0	2 344	1.8	23
13	Nonmetallic minerals n.e.c.	232	—	14 200	2.6	S	S	85
14	Metallic ores and concentrates	S	S	S	S	S	S	846
15	Coal	635	.1	26 186	4.8	5 479	4.3	107
17	Gasoline and aviation turbine fuel	11 163	2.3	42 816	7.8	2 072	1.6	28
18	Fuel oils	5 405	1.1	22 670	4.2	1 187	.9	24
19	Coal and petroleum products, n.e.c.	3 661	.7	11 819	2.2	S	S	S
20	Basic chemicals	6 228	1.3	17 499	3.2	4 498	3.5	319
21	Pharmaceutical products	18 226	3.7	S	S	S	S	444
22	Fertilizers	S	S	S	S	S	S	144
23	Chemical products and preparations, n.e.c.	16 310	3.3	9 261	1.7	5 585	4.4	466
24	Plastics and rubber	17 480	3.5	6 884	1.3	3 864	3.0	411
25	Logs and other wood in the rough	S	S	330	—	51	—	S
26	Wood products	5 351	1.1	6 850	1.3	1 139	.9	208
27	Pulp, newsprint, paper, and paperboard	4 393	.9	5 455	1.0	1 955	1.5	165
28	Paper or paperboard articles	4 359	.9	3 024	.6	668	.5	228
29	Printed products	6 630	1.3	2 346	.4	944	.7	645
30	Textiles, leather, and articles of textiles or leather	22 835	4.6	1 980	.4	655	.5	801
31	Nonmetallic mineral products	9 337	1.9	38 417	7.0	7 059	5.6	224
32	Base metal in primary or semifinished forms and in finished basic shapes	24 064	4.9	30 765	5.6	9 247	7.3	364
33	Articles of base metal	21 716	4.4	11 025	2.0	4 633	3.6	454
34	Machinery	42 635	8.6	7 500	1.4	2 903	2.3	325
35	Electronic and other electrical equipment and components and office equipment	49 244	10.0	5 667	1.0	3 491	2.7	429
36	Motorized and other vehicles (including parts)	109 215	22.1	23 988	4.4	10 677	8.4	186
37	Transportation equipment, n.e.c.	8 761	1.8	152	—	106	—	986
38	Precision instruments and apparatus	4 492	.9	196	—	110	—	399
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	8 736	1.8	1 771	.3	954	.8	690
40	Miscellaneous manufactured products	14 810	3.0	S	S	1 797	1.4	711
41	Waste and scrap	S	S	S	S	S	S	97
43	Mixed freight	25 904	5.2	10 184	1.9	2 005	1.6	314
--	Commodity unknown	1 021	.2	1 017	.2	640	.5	254

— 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.

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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	—	—	—	—	—	—
02	Cereal grains	S	.6	S	4.9	S	13.2
03	Other agricultural products .....	.6	1.0	1.7	2.1	3.8	3.8
04	Animal feed and products of animal origin, n.e.c. ....	.5	.8	1.2	1.7	1.8	2.7
05	Meat, fish, seafood, and their preparations .....	.7	1.1	.2	.4	S	.4
06	Milled grain products and preparations, and bakery products	1.8	1.8	1.0	1.2	2.8	2.1
07	Other prepared foodstuffs and fats and oils	3.4	4.6	3.8	4.1	5.4	5.6
08	Alcoholic beverages .....	.9	.8	1.1	.6	S	.4
09	Tobacco products	S	.3	S	—	S	—
10	Monumental or building stone	S	S	S	S	S	S
11	Natural sands	—	—	4.3	S	.7	S
12	Gravel and crushed stone .....	.1	.2	16.0	19.6	1.8	4.6
13	Nonmetallic minerals n.e.c.	—	.1	2.6	3.5	S	1.4
14	Metallic ores and concentrates	S	S	S	S	S	S
15	Coal .....	.1	.3	4.8	7.8	4.3	4.3
17	Gasoline and aviation turbine fuel	2.3	2.5	7.8	7.0	1.6	1.2
18	Fuel oils	1.1	.8	4.2	2.7	.9	.6
19	Coal and petroleum products, n.e.c. ....	.7	.6	2.2	3.5	S	1.5
20	Basic chemicals	1.3	1.3	3.2	1.9	3.5	2.3
21	Pharmaceutical products	3.7	2.0	S	—	S	—
22	Fertilizers	S	S	S	S	S	S
23	Chemical products and preparations, n.e.c.	3.3	4.0	1.7	1.8	4.4	5.3
24	Plastics and rubber	3.5	5.3	1.3	1.5	3.0	3.3
25	Logs and other wood in the rough	S	—	—	—	—	S
26	Wood products	1.1	1.0	1.3	1.4	.9	1.4
27	Pulp, newsprint, paper, and paperboard .....	.9	1.2	1.0	.9	1.5	1.9
28	Paper or paperboard articles .....	.9	1.3	.6	.8	.5	.8
29	Printed products	1.3	1.6	.4	.3	.7	.6
30	Textiles, leather, and articles of textiles or leather	4.6	2.5	.4	.2	.5	.7
31	Nonmetallic mineral products	1.9	2.1	7.0	4.7	5.6	5.0
32	Base metal in primary or semifinished forms and in finished basic shapes	4.9	8.3	5.6	8.8	7.3	12.5
33	Articles of base metal	4.4	6.1	2.0	1.9	3.6	4.6
34	Machinery	8.6	10.1	1.4	1.4	2.3	3.7
35	Electronic and other electrical equipment and components and office equipment	10.0	6.8	1.0	.4	2.7	1.5
36	Motorized and other vehicles (including parts)	22.1	19.0	4.4	2.5	8.4	5.1
37	Transportation equipment, n.e.c.	1.8	.6	—	—	—	—
38	Precision instruments and apparatus .....	.9	1.1	—	—	—	—
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	1.8	1.2	.3	.2	.8	.8
40	Miscellaneous manufactured products	3.0	5.3	S	.7	1.4	1.7
41	Waste and scrap	S	.6	S	2.9	S	1.7
43	Mixed freight	5.2	1.5	1.9	.6	1.6	.4
--	Commodity unknown .....	.2	.8	.2	.8	.5	.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.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
ALL COMMODITIES							
Total²	494 278	100.0	546 095	100.0	127 152	100.0	403
Single modes	421 855	85.3	517 685	94.8	115 000	90.4	198
Truck ³	377 110	76.3	387 982	71.0	68 483	53.9	178
For-hire truck	264 450	53.5	230 199	42.2	56 731	44.6	394
Private truck	112 056	22.7	157 543	28.8	11 590	9.1	71
Rail	33 146	6.7	72 295	13.2	35 823	28.2	783
Water	1 082	.2	24 486	4.5	8 274	6.5	273
Shallow draft	927	.2	19 635	3.6	7 880	6.2	351
Great Lakes	S	S	S	S	S	S	106
Deep draft	S	S	S	S	S	S	S
Air (includes truck and air)	3 453	.7	124	—	173	.1	1 189
Pipeline ⁴	7 065	1.4	32 798	6.0	S	S	S
Multiple modes	50 796	10.3	7 203	1.3	6 841	5.4	664
Parcel, U.S. Postal Service or courier	46 468	9.4	1 642	.3	1 050	.8	663
Truck and rail	4 195	.8	1 733	.3	3 404	2.7	1 698
Truck and water	8	—	1	—	3	—	5 380
Rail and water	S	S	S	S	S	S	380
Other multiple modes	S	S	S	S	S	S	S
Other and unknown modes	21 627	4.4	21 207	3.9	5 312	4.2	139
SCTG 01, LIVE ANIMALS AND LIVE FISH							
Total	168	100.0	179	100.0	57	100.0	211
Single modes	168	100.0	179	100.0	57	100.0	211
Truck ³	168	100.0	179	100.0	57	100.0	211
For-hire truck	S	S	S	S	S	S	123
Private truck	130	77.5	149	83.2	50	89.0	223
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	—	—	—	—	—	—	—
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—
SCTG 02, CEREAL GRAINS							
Total	S	S	S	S	S	S	S
Single modes	S	S	S	S	S	S	S
Truck ³	S	S	S	S	S	S	137
For-hire truck	S	S	S	S	S	S	169
Private truck	S	S	S	S	S	S	43
Rail	S	S	S	S	S	S	463
Water	288	12.6	S	S	S	S	1 213
Shallow draft	S	S	S	S	S	S	1 284
Great Lakes	S	S	S	S	S	S	1
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

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	3 110	100.0	9 300	100.0	4 799	100.0	468
Single modes	3 093	99.4	9 299	100.0	4 798	100.0	449
Truck ³	S	S	S	S	S	S	446
For-hire truck	S	S	S	S	S	S	613
Private truck	S	S	S	S	S	S	67
Rail	S	S	S	S	S	S	633
Water	359	11.6	1 989	21.4	2 455	51.2	1 202
Shallow draft	359	11.6	1 989	21.4	2 455	51.2	1 202
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	933
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	933
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	6
SCTG 04, ANIMAL FEED AND PRODUCTS OF ANIMAL ORIGIN, N.E.C.							
Total	2 571	100.0	6 696	100.0	2 346	100.0	263
Single modes	2 490	96.8	6 488	96.9	2 310	98.5	296
Truck ³	2 321	90.3	5 814	86.8	1 793	76.4	287
For-hire truck	1 625	71.0	4 623	69.0	1 522	64.9	354
Private truck	S	S	1 191	17.8	S	S	187
Rail	169	6.6	674	10.1	517	22.0	1 102
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	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	90
SCTG 05, MEAT, FISH, SEAFOOD, AND THEIR PREPARATIONS							
Total	3 627	100.0	1 098	100.0	S	S	188
Single modes	3 621	99.8	1 093	99.6	S	S	188
Truck ³	3 621	99.8	1 093	99.6	S	S	188
For-hire truck	2 662	73.4	902	82.1	S	S	728
Private truck	S	S	192	17.5	26	4.5	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	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	9 050	100.0	5 433	100.0	3 595	100.0	438
Single modes	8 550	94.5	5 096	93.8	2 822	78.5	399
Truck ³	8 470	93.6	5 019	92.4	2 658	73.9	393
For-hire truck	7 288	80.5	4 062	74.8	2 375	66.1	601
Private truck	1 181	13.1	S	S	S	S	293
Rail	80	.9	77	1.4	165	4.6	2 072
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	500	5.5	S	S	S	S	581
Parcel, U.S. Postal Service or courier	S	S	7	.1	3	—	520
Truck and rail	S	S	S	S	S	S	2 334
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—
SCTG 07, OTHER PREPARED FOODSTUFFS AND FATS AND OILS							
Total	16 729	100.0	20 965	100.0	6 851	100.0	S
Single modes	16 352	97.7	20 614	98.3	6 063	88.5	S
Truck ³	15 796	94.4	18 520	88.3	4 464	65.2	S
For-hire truck	8 217	49.1	10 646	50.8	3 525	51.4	S
Private truck	7 578	45.3	7 874	37.6	939	13.7	S
Rail	553	3.3	2 085	9.9	1 599	23.3	887
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	901
Pipeline ⁴	S	S	S	S	S	S	S
Multiple modes	S	S	S	S	S	S	283
Parcel, U.S. Postal Service or courier	S	S	S	S	1	—	141
Truck and rail	S	S	S	S	S	S	2 428
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	235
SCTG 08, ALCOHOLIC BEVERAGES							
Total	4 561	100.0	6 037	100.0	S	S	S
Single modes	4 541	99.6	6 016	99.7	S	S	S
Truck ³	4 404	96.6	5 751	95.3	S	S	S
For-hire truck	2 152	47.2	3 637	60.3	S	S	667
Private truck	S	S	S	S	S	S	S
Rail	137	3.0	264	4.4	131	6.7	496
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	28
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	28
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	336

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	\$	\$	\$	\$	\$	\$	25
Single modes	\$	\$	\$	\$	\$	\$	25
Truck ³	\$	\$	\$	\$	\$	\$	25
For-hire truck	\$	\$	\$	\$	\$	\$	25
Private truck	\$	\$	\$	\$	\$	\$	25
Rail	-	-	-	-	-	-	-
Water	-	-	-	-	-	-	-
Shallow draft	-	-	-	-	-	-	-
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	-	-	-	-	-	-	-
Pipeline ⁴	-	-	-	-	\$	\$	\$
Multiple modes	-	-	-	-	-	-	-
Parcel, U.S. Postal Service or courier	-	-	-	-	-	-	-
Truck and rail	-	-	-	-	-	-	-
Truck and water	-	-	-	-	-	-	-
Rail and water	-	-	-	-	-	-	-
Other multiple modes	-	-	-	-	-	-	-
Other and unknown modes	-	-	-	-	-	-	-
SCTG 10, MONUMENTAL OR BUILDING STONE							
Total	\$	\$	\$	\$	\$	\$	30
Single modes	\$	\$	\$	\$	\$	\$	41
Truck ³	\$	\$	\$	\$	\$	\$	41
For-hire truck	\$	\$	\$	\$	\$	\$	28
Private truck	\$	\$	\$	\$	\$	\$	44
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	\$	\$	\$	\$	\$	\$	2
SCTG 11, NATURAL SANDS							
Total	179	100.0	23 668	100.0	863	100.0	35
Single modes	171	95.4	21 101	89.2	805	93.2	35
Truck ³	169	94.9	20 934	88.4	804	93.1	35
For-hire truck	113	63.3	11 706	49.5	583	67.5	51
Private truck	56	31.5	9 228	39.0	221	25.6	19
Rail	-	-	-	-	-	-	-
Water	\$	\$	\$	\$	\$	\$	5
Shallow draft	\$	\$	\$	\$	\$	\$	5
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	8	4.4	2 566	10.8	58	6.8	23

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	534	100.0	87 357	100.0	2 344	100.0	23
Single modes	502	94.2	80 589	92.3	2 207	94.2	24
Truck ³	487	91.2	77 174	88.3	1 856	79.2	24
For-hire truck	268	50.3	41 533	47.5	1 073	45.8	26
Private truck	218	40.9	35 641	40.8	783	33.4	21
Rail	—	—	—	—	—	—	—
Water	16	2.9	\$	\$	\$	\$	110
Shallow draft	—	—	—	—	—	—	—
Great Lakes	\$	\$	\$	\$	\$	\$	131
Deep draft	\$	\$	\$	\$	\$	\$	96
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	31	5.8	6 767	7.7	137	5.8	20
SCTG 13, NONMETALLIC MINERALS N.E.C.							
Total	232	100.0	14 200	100.0	\$	\$	85
Single modes	\$	\$	14 180	99.9	\$	\$	58
Truck ³	\$	\$	\$	\$	472	33.6	51
For-hire truck	\$	\$	\$	\$	\$	\$	60
Private truck	36	15.4	2 961	20.9	152	10.8	36
Rail	\$	\$	\$	\$	\$	\$	548
Water	\$	\$	\$	\$	\$	\$	\$
Shallow draft	\$	\$	\$	\$	\$	\$	1
Great Lakes	\$	\$	\$	\$	\$	\$	87
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	\$	\$	\$	\$	\$	\$	581
Pipeline ⁴	—	—	—	—	\$	\$	\$
Multiple modes	\$	\$	\$	\$	\$	\$	555
Parcel, U.S. Postal Service or courier	\$	\$	\$	\$	\$	\$	555
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	\$	\$	\$	\$	\$	\$	202
SCTG 14, METALLIC ORES AND CONCENTRATES							
Total	\$	\$	\$	\$	\$	\$	846
Single modes	\$	\$	\$	\$	\$	\$	846
Truck ³	\$	\$	\$	\$	\$	\$	890
For-hire truck	\$	\$	\$	\$	\$	\$	\$
Private truck	\$	\$	\$	\$	\$	\$	1 239
Rail	\$	\$	\$	\$	\$	\$	2 626
Water	\$	\$	\$	\$	\$	\$	144
Shallow draft	\$	\$	\$	\$	\$	\$	144
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	\$	\$	\$
Multiple modes	\$	\$	\$	\$	\$	\$	1 577
Parcel, U.S. Postal Service or courier	\$	\$	\$	\$	\$	\$	1 577
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	\$	\$	\$	\$	\$	\$	290

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	635	100.0	26 186	100.0	5 479	100.0	107
Single modes	534	84.1	22 272	85.1	3 051	55.7	99
Truck ³	195	30.7	8 309	31.7	709	12.9	93
For-hire truck	162	25.4	7 179	27.4	562	10.2	91
Private truck	33	5.2	1 130	4.3	147	2.7	152
Rail	S	S	S	S	S	S	S
Water	269	42.3	10 930	41.7	2 196	40.1	209
Shallow draft	269	42.3	10 930	41.7	2 196	40.1	209
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	600
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	S	S	S	S	S	S	496
Truck and water	—	—	—	—	—	—	—
Rail and water	S	S	S	S	S	S	380
Other multiple modes	S	S	S	S	S	S	1 947
Other and unknown modes	—	—	—	—	—	—	—
SCTG 17, GASOLINE AND AVIATION TURBINE FUEL							
Total	11 163	100.0	42 816	100.0	2 072	100.0	28
Single modes	11 011	98.6	42 418	99.1	2 060	99.4	28
Truck ³	5 840	52.3	19 939	46.6	604	29.1	27
For-hire truck	1 887	16.9	7 737	18.1	277	13.4	36
Private truck	3 953	35.4	12 202	28.5	326	15.7	24
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 327
Pipeline ⁴	5 172	46.3	22 479	52.5	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	151	1.4	399	.9	13	.6	31
SCTG 18, FUEL OILS							
Total	5 405	100.0	22 670	100.0	1 187	100.0	24
Single modes	5 272	97.5	22 260	98.2	1 176	99.0	24
Truck ³	3 503	64.8	S	S	S	S	24
For-hire truck	598	11.1	2 473	10.9	59	5.0	23
Private truck	S	S	S	S	S	S	24
Rail	S	S	S	S	S	S	3
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	1 730	32.0	8 767	38.7	—	—	—
Multiple modes	S	S	S	S	S	S	7
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	7
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	133	2.5	410	1.8	12	1.0	24

See footnotes at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
SCTG 19, COAL AND PETROLEUM PRODUCTS, N.E.C.							
Total	3 661	100.0	11 819	100.0	S	S	S
Single modes	3 648	99.6	11 818	100.0	S	S	105
Truck ³	3 303	90.2	S	S	S	S	100
For-hire truck	S	S	S	S	S	S	298
Private truck	S	S	2 104	17.8	145	4.6	S
Rail	268	7.3	1 707	14.4	953	29.9	565
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	S	S	S	S	S	S	S
Multiple modes	S	S	S	S	S	S	1 130
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	1 130
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	24
SCTG 20, BASIC CHEMICALS							
Total	6 228	100.0	17 499	100.0	4 498	100.0	319
Single modes	5 917	95.0	17 337	99.1	4 342	96.5	237
Truck ³	4 659	74.8	11 442	65.4	1 878	41.8	208
For-hire truck	3 527	56.6	S	S	1 492	33.2	426
Private truck	1 131	18.2	3 681	21.0	S	S	48
Rail	1 114	17.9	S	S	2 428	54.0	530
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	949
Pipeline ⁴	S	S	S	S	S	S	S
Multiple modes	S	S	S	S	S	S	684
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	682
Truck and rail	S	S	S	S	S	S	2 201
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	673
SCTG 21, PHARMACEUTICAL PRODUCTS							
Total	18 226	100.0	S	S	S	S	444
Single modes	11 003	60.4	S	S	S	S	S
Truck ³	10 672	58.6	S	S	S	S	S
For-hire truck	6 974	38.3	251	4.8	32	1.1	S
Private truck	3 698	20.3	84	1.6	S	S	83
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	1	—	1	—	986
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	6 650	36.5	S	S	S	S	506
Parcel, U.S. Postal Service or courier	6 650	36.5	S	S	S	S	506
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	540

See footnotes at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
SCTG 22, FERTILIZERS							
Total	S	S	S	S	S	S	144
Single modes	S	S	S	S	S	S	S
Truck ³	S	S	S	S	S	S	S
For-hire truck	S	S	S	S	S	S	573
Private truck	272	20.5	693	6.1	43	1.1	33
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	1 414
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	1 265
Truck and rail	S	S	S	S	S	S	1 648
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	7
SCTG 23, CHEMICAL PRODUCTS AND PREPARATIONS, N.E.C.							
Total	16 310	100.0	9 261	100.0	5 585	100.0	466
Single modes	14 902	91.4	8 967	96.8	5 078	90.9	278
Truck ³	14 238	87.3	8 191	88.5	4 406	78.9	269
For-hire truck	11 114	68.1	6 313	68.2	3 422	61.3	415
Private truck	3 086	18.9	1 855	20.0	977	17.5	S
Rail	634	3.9	774	8.4	671	12.0	1 055
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	954
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	1 354	8.3	271	2.9	482	8.6	622
Parcel, U.S. Postal Service or courier	839	5.1	56	.6	37	.7	620
Truck and rail	S	S	215	2.3	445	8.0	2 088
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	54	.3	23	.3	S	S	S
SCTG 24, PLASTICS AND RUBBER							
Total	17 480	100.0	6 884	100.0	3 864	100.0	411
Single modes	15 884	90.9	6 652	96.6	3 738	96.7	345
Truck ³	15 188	86.9	5 742	83.4	3 008	77.8	333
For-hire truck	12 524	71.6	4 744	68.9	2 662	68.9	553
Private truck	2 393	13.7	904	13.1	234	6.1	S
Rail	S	S	S	S	S	S	807
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	3	—	S	S	1 024
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	994	5.7	67	1.0	45	1.2	569
Parcel, U.S. Postal Service or courier	993	5.7	67	1.0	45	1.2	569
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	8 132
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	4
Other and unknown modes	S	S	S	S	81	2.1	S

See footnotes at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
SCTG 25, LOGS AND OTHER WOOD IN THE ROUGH							
Total	S	S	330	100.0	51	100.0	S
Single modes	S	S	321	97.5	33	65.5	S
Truck ³	S	S	321	97.5	33	65.5	S
For-hire truck	S	S	219	66.5	26	50.8	113
Private truck	S	S	S	S	S	S	49
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	1 921
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	S	S	S	S	S	S	1 921
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—
SCTG 26, WOOD PRODUCTS							
Total	5 351	100.0	6 850	100.0	1 139	100.0	208
Single modes	4 672	87.3	6 428	93.8	1 042	91.5	148
Truck ³	4 642	86.8	6 337	92.5	1 004	88.2	142
For-hire truck	2 397	44.8	2 482	36.2	710	62.3	384
Private truck	2 241	41.9	3 849	56.2	284	25.0	65
Rail	25	.5	90	1.3	S	S	883
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 201
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	108	2.0	27	.4	34	3.0	743
Parcel, U.S. Postal Service or courier	40	.8	4	—	4	.3	741
Truck and rail	S	S	S	S	31	2.7	1 334
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 27, PULP, NEWSPRINT, PAPER, AND PAPERBOARD							
Total	4 393	100.0	5 455	100.0	1 955	100.0	165
Single modes	4 278	97.4	5 351	98.1	1 927	98.6	164
Truck ³	4 171	95.0	5 114	93.7	1 690	86.5	158
For-hire truck	2 716	61.8	3 131	57.4	1 420	72.6	212
Private truck	S	S	S	S	S	S	64
Rail	105	2.4	237	4.3	236	12.1	975
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 821
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	206
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	204
Truck and rail	S	S	S	S	S	S	885
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S

See footnotes at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
SCTG 28, PAPER OR PAPERBOARD ARTICLES							
Total	4 359	100.0	3 024	100.0	668	100.0	228
Single modes	3 966	91.0	2 987	98.8	649	97.2	S
Truck ³	3 920	89.9	2 970	98.2	627	93.8	S
For-hire truck	2 507	57.5	1 933	63.9	502	75.1	236
Private truck	1 413	32.4	1 037	34.3	125	18.6	S
Rail	S	S	17	.6	S	S	1 340
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	609
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	609
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	83
SCTG 29, PRINTED PRODUCTS							
Total	6 630	100.0	2 346	100.0	944	100.0	645
Single modes	4 044	61.0	1 077	45.9	684	72.5	773
Truck ³	4 017	60.6	1 074	45.8	677	71.8	741
For-hire truck	1 705	25.7	761	32.4	377	40.0	517
Private truck	S	S	S	S	S	S	790
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 748
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	2 051	30.9	98	4.2	53	5.6	648
Parcel, U.S. Postal Service or courier	2 051	30.9	98	4.2	53	5.6	648
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	306
SCTG 30, TEXTILES, LEATHER, AND ARTICLES OF TEXTILES OR LEATHER							
Total	22 835	100.0	1 980	100.0	655	100.0	801
Single modes	15 984	70.0	1 680	84.8	509	77.8	551
Truck ³	15 966	69.9	1 678	84.7	507	77.4	541
For-hire truck	14 479	63.4	1 354	68.4	444	67.8	759
Private truck	1 477	6.5	S	S	S	S	112
Rail	S	S	S	S	S	S	2 448
Water	S	S	S	S	S	S	5
Shallow draft	S	S	S	S	S	S	5
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	11	—	S	S	S	S	1 030
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	3 264	14.3	126	6.4	81	12.3	842
Parcel, U.S. Postal Service or courier	3 264	14.3	126	6.4	81	12.3	842
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S

See footnotes at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
SCTG 31, NONMETALLIC MINERAL PRODUCTS							
Total	9 337	100.0	38 417	100.0	7 059	100.0	224
Single modes	8 911	95.4	37 710	98.2	6 393	90.6	192
Truck ³	8 870	95.0	36 968	96.2	5 640	79.9	190
For-hire truck	6 116	65.5	12 001	31.2	4 750	67.3	480
Private truck	2 753	29.5	24 966	65.0	890	12.6	110
Rail	S	S	S	S	S	S	1 026
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	11	.1	1	—	—	—	1 167
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	178	1.9	S	S	S	S	709
Parcel, U.S. Postal Service or courier	132	1.4	5	—	4	—	707
Truck and rail	S	S	S	S	S	S	1 017
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	278
SCTG 32, BASE METAL IN PRIMARY OR SEMIFINISHED FORMS AND IN FINISHED BASIC SHAPES							
Total	24 064	100.0	30 765	100.0	9 247	100.0	364
Single modes	23 241	96.6	30 289	98.5	9 040	97.8	232
Truck ³	20 124	83.6	23 405	76.1	6 137	66.4	228
For-hire truck	15 629	64.9	18 026	58.6	5 446	58.9	430
Private truck	4 490	18.7	5 378	17.5	689	7.5	81
Rail	3 044	12.7	6 862	22.3	S	S	397
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	73	.3	21	—	S	S	886
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	485
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	485
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	273
Other and unknown modes	S	S	295	1.0	S	S	291
SCTG 33, ARTICLES OF BASE METAL							
Total	21 716	100.0	11 025	100.0	4 633	100.0	454
Single modes	17 054	78.5	10 572	95.9	4 447	96.0	377
Truck ³	16 123	74.2	9 619	87.2	3 415	73.7	322
For-hire truck	11 483	52.9	6 268	56.9	2 763	59.6	476
Private truck	4 640	21.4	S	S	652	14.1	123
Rail	528	2.4	S	S	S	S	1 099
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	403	1.9	S	S	S	S	1 194
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	3 947	18.2	154	1.4	103	2.2	528
Parcel, U.S. Postal Service or courier	3 934	18.1	137	1.2	78	1.7	527
Truck and rail	S	S	S	S	S	S	1 216
Truck and water	S	S	S	S	S	S	4 937
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	716	3.3	299	2.7	83	1.8	96

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	42 635	100.0	7 500	100.0	2 903	100.0	325
Single modes	37 043	86.9	7 067	94.2	2 277	78.4	266
Truck ³	34 578	81.1	6 661	88.8	1 826	62.9	233
For-hire truck	26 667	62.5	4 650	62.0	1 695	58.4	467
Private truck	7 900	18.5	2 010	26.8	130	4.5	37
Rail	1 949	4.6	390	5.2	405	13.9	1 456
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	516	1.2	16	.2	S	S	1 213
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	4 519	10.6	S	S	S	S	512
Parcel, U.S. Postal Service or courier	4 138	9.7	79	1.1	34	1.2	508
Truck and rail	S	S	S	S	S	S	2 625
Truck and water	S	S	S	S	S	S	4 870
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	1 073	2.5	153	2.0	S	S	S
SCTG 35, ELECTRONIC AND OTHER ELECTRICAL EQUIPMENT AND COMPONENTS AND OFFICE EQUIPMENT							
Total	49 244	100.0	5 667	100.0	3 491	100.0	429
Single modes	36 101	73.3	5 024	88.7	S	S	298
Truck ³	34 777	70.6	4 640	81.9	S	S	247
For-hire truck	S	S	3 218	56.8	2 288	65.5	598
Private truck	10 091	20.5	1 422	25.1	S	S	S
Rail	S	S	S	S	S	S	S
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	1 135	2.3	9	.2	9	.3	1 226
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	11 640	23.6	442	7.8	565	16.2	712
Parcel, U.S. Postal Service or courier	11 072	22.5	270	4.8	194	5.6	714
Truck and rail	545	1.1	171	3.0	S	S	2 025
Truck and water	S	S	S	S	S	S	8 090
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	58
Other and unknown modes	S	S	S	S	S	S	S
SCTG 36, MOTORIZED AND OTHER VEHICLES (INCLUDING PARTS)							
Total	109 215	100.0	23 988	100.0	10 677	100.0	186
Single modes	95 641	87.6	22 663	94.5	10 370	97.1	S
Truck ³	76 106	69.7	18 162	75.7	6 299	59.0	S
For-hire truck	66 902	61.3	14 930	62.2	5 718	53.6	418
Private truck	9 097	8.3	S	S	S	S	S
Rail	S	S	S	S	S	S	1 278
Water	S	S	S	S	S	S	9
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	S	S	S	S	S	S	9
Air (includes truck and air)	19	—	1	—	1	—	1 166
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	3 064	2.8	S	S	S	S	630
Parcel, U.S. Postal Service or courier	1 187	1.1	52	.2	33	.3	628
Truck and rail	S	S	S	S	S	S	924
Truck and water	S	S	S	S	S	S	123
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	5
Other and unknown modes	10 510	9.6	S	S	37	.3	S

See footnotes at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
SCTG 37, TRANSPORTATION EQUIPMENT, N.E.C.							
Total	8 761	100.0	152	100.0	106	100.0	986
Single modes	8 286	94.6	149	98.4	103	97.1	868
Truck ³	8 008	91.4	95	62.6	50	47.6	807
For-hire truck	S	S	78	51.5	44	41.3	750
Private truck	S	S	S	S	S	S	855
Rail	34	.4	52	34.4	49	46.0	934
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 397
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	474	5.4	S	S	S	S	1 110
Parcel, U.S. Postal Service or courier	474	5.4	S	S	S	S	1 110
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	839
SCTG 38, PRECISION INSTRUMENTS AND APPARATUS							
Total	4 492	100.0	196	100.0	110	100.0	399
Single modes	2 530	56.3	167	85.3	92	84.0	441
Truck ³	2 204	49.1	164	83.7	90	82.0	274
For-hire truck	1 527	34.0	124	63.3	85	77.8	432
Private truck	677	15.1	40	20.4	5	4.2	S
Rail	—	—	—	—	—	—	—
Water	S	S	S	S	S	S	14
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	S	S	S	S	S	S	14
Air (includes truck and air)	S	S	3	1.3	2	2.0	1 189
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	1 902	42.3	19	9.6	12	10.8	392
Parcel, U.S. Postal Service or courier	1 902	42.3	19	9.6	12	10.8	391
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	5 073
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	386
SCTG 39, FURNITURE, MATTRESSES AND MATTRESS SUPPORTS, LAMPS, LIGHTING FITTINGS, AND ILLUMINATED SIGNS							
Total	8 736	100.0	1 771	100.0	954	100.0	690
Single modes	7 848	89.8	1 700	96.0	887	93.0	380
Truck ³	7 827	89.6	1 697	95.8	881	92.3	373
For-hire truck	4 613	52.8	957	54.0	558	58.5	625
Private truck	3 213	36.8	739	41.8	322	33.8	S
Rail	S	S	S	S	S	S	2 480
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	884
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	862	9.9	64	3.6	57	6.0	898
Parcel, U.S. Postal Service or courier	862	9.9	64	3.6	57	6.0	898
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	4 925
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S

See footnotes at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
SCTG 40, MISCELLANEOUS MANUFACTURED PRODUCTS							
Total	14 810	100.0	S	S	1 797	100.0	711
Single modes	9 620	65.0	S	S	1 718	95.6	452
Truck ³	9 408	63.5	S	S	1 598	88.9	435
For-hire truck	5 811	39.2	1 892	32.3	1 182	65.8	786
Private truck	3 596	24.3	S	S	416	23.1	116
Rail	S	S	S	S	S	S	2 550
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	971
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	4 977	33.6	114	1.9	75	4.2	804
Parcel, U.S. Postal Service or courier	4 828	32.6	99	1.7	69	3.8	805
Truck and rail	S	S	S	S	S	S	237
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	213	1.4	13	.2	4	.2	S
SCTG 41, WASTE AND SCRAP							
Total	S	S	S	S	S	S	97
Single modes	S	S	S	S	S	S	86
Truck ³	2 921	63.4	10 933	39.4	1 093	41.3	89
For-hire truck	2 727	59.2	9 676	34.9	1 012	38.2	96
Private truck	192	4.2	1 251	4.5	81	3.0	52
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	124
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	124
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	808
SCTG 43, MIXED FREIGHT							
Total	25 904	100.0	10 184	100.0	2 005	100.0	314
Single modes	23 375	90.2	9 656	94.8	1 334	66.5	62
Truck ³	23 349	90.1	9 643	94.7	1 316	65.6	56
For-hire truck	6 526	25.2	2 628	25.8	569	28.4	174
Private truck	16 714	64.5	6 982	68.6	737	36.8	38
Rail	S	S	S	S	S	S	1 495
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 226
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	2 349	9.1	173	1.7	138	6.9	795
Parcel, U.S. Postal Service or courier	2 327	9.0	158	1.5	123	6.1	795
Truck and rail	S	S	S	S	S	S	1 002
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	180	.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	1 021	100.0	1 017	100.0	640	100.0	254
Single modes	656	64.3	982	96.6	627	98.0	129
Truck ³	484	47.5	381	37.4	S	S	S
For-hire truck	257	25.2	221	21.7	48	7.6	313
Private truck	227	22.3	160	15.7	S	S	S
Rail	S	S	S	S	S	S	1 486
Water	S	S	S	S	S	S	1 285
Shallow draft	S	S	S	S	S	S	1 285
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	S	S	S	S	S	S	306
Pipeline ⁴	-	-	-	-	S	S	S
Multiple modes	S	S	S	S	S	S	554
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	554
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	494 278	100.0	546 095	100.0	127 152	100.0
NEW ENGLAND STATES						
Connecticut	2 604	.5	582	.1	365	.3
Maine	963	.2	S	S	S	S
Massachusetts	4 368	.9	1 766	.3	1 328	1.0
New Hampshire	1 009	.2	203	—	153	.1
Rhode Island	S	S	256	—	189	.1
Vermont	294	—	46	—	33	—
MIDDLE ATLANTIC STATES						
New Jersey	10 118	2.0	3 945	.7	2 007	1.6
New York	18 693	3.8	7 165	1.3	3 209	2.5
Pennsylvania	20 544	4.2	27 371	5.0	9 258	7.3
EAST NORTH CENTRAL STATES						
Illinois	15 483	3.1	7 938	1.5	2 793	2.2
Indiana	27 270	5.5	22 200	4.1	4 033	3.2
Michigan	45 271	9.2	30 210	5.5	5 483	4.3
Ohio	169 127	34.2	334 203	61.2	15 523	12.2
Wisconsin	15 287	3.1	4 822	.9	2 204	1.7
WEST NORTH CENTRAL STATES						
Iowa	2 711	.5	1 420	.3	848	.7
Kansas	3 816	.8	920	.2	715	.6
Minnesota	6 303	1.3	1 679	.3	1 257	1.0
Missouri	7 039	1.4	2 292	.4	1 363	1.1
Nebraska	935	.2	347	—	289	.2
North Dakota	483	.1	91	—	106	—
South Dakota	428	—	172	—	160	.1
SOUTH ATLANTIC STATES						
Delaware	1 511	.3	S	S	S	S
District of Columbia	210	—	7	—	3	—
Florida	8 304	1.7	4 019	.7	5 040	4.0
Georgia	8 307	1.7	5 833	1.1	3 684	2.9
Maryland	4 440	.9	2 368	.4	1 050	.8
North Carolina	9 492	1.9	12 558	2.3	S	S
South Carolina	S	S	1 804	.3	1 140	.9
Virginia	4 244	.9	2 781	.5	1 455	1.1
West Virginia	4 743	1.0	8 373	1.5	988	.8
EAST SOUTH CENTRAL STATES						
Alabama	3 286	.7	1 593	.3	1 038	.8
Kentucky	17 598	3.6	20 888	3.8	S	S
Mississippi	1 091	.2	374	—	268	.2
Tennessee	6 859	1.4	4 583	.8	1 975	1.6
WEST SOUTH CENTRAL STATES						
Arkansas	1 696	.3	820	.2	662	.5
Louisiana	S	S	5 854	1.1	7 056	5.5
Oklahoma	S	S	858	.2	822	.6
Texas	21 726	4.4	8 662	1.6	11 172	8.8
MOUNTAIN STATES						
Arizona	1 944	.4	498	—	970	.8
Colorado	2 335	.5	650	.1	826	.6
Idaho	454	—	80	—	158	.1
Montana	S	S	S	S	S	S
Nevada	593	.1	227	—	479	.4
New Mexico	334	—	S	S	S	S
Utah	1 059	.2	266	—	466	.4
Wyoming	314	—	S	S	S	S
PACIFIC STATES						
Alaska	187	—	21	—	37	—
California	16 857	3.4	4 987	.9	11 942	9.4
Hawaii	115	—	S	S	S	S
Oregon	1 371	.3	333	—	804	.6
Washington	3 016	.6	822	.2	2 039	1.6

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

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

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

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Table 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	413 206	100.0	584 902	100.0	144 749	100.0
NEW ENGLAND STATES						
Connecticut	1 634	.4	429	—	278	.2
Maine	355	—	250	—	223	.2
Massachusetts	4 013	1.0	469	—	329	.2
New Hampshire	733	.2	166	—	119	—
Rhode Island	739	.2	S	S	S	S
Vermont	422	.1	385	—	242	.2
MIDDLE ATLANTIC STATES						
New Jersey	7 629	1.8	3 307	.6	1 705	1.2
New York	13 592	3.3	5 621	1.0	2 296	1.6
Pennsylvania	16 500	4.0	21 954	3.8	5 587	3.9
EAST NORTH CENTRAL STATES						
Illinois	18 382	4.4	16 337	2.8	5 782	4.0
Indiana	22 343	5.4	15 823	2.7	3 586	2.5
Michigan	24 802	6.0	30 868	5.3	8 779	6.1
Ohio	169 127	40.9	334 203	57.1	15 523	10.7
Wisconsin	7 157	1.7	8 712	1.5	5 143	3.6
WEST NORTH CENTRAL STATES						
Iowa	3 233	.8	S	S	S	S
Kansas	3 509	.8	621	.1	497	.3
Minnesota	4 405	1.1	20 107	3.4	18 423	12.7
Missouri	10 474	2.5	2 142	.4	1 212	.8
Nebraska	1 175	.3	416	—	363	.3
North Dakota	148	—	235	—	241	.2
South Dakota	442	.1	150	—	165	.1
SOUTH ATLANTIC STATES						
Delaware	1 290	.3	226	—	114	—
District of Columbia	S	S	S	S	S	S
Florida	4 053	1.0	2 410	.4	2 638	1.8
Georgia	7 665	1.9	2 994	.5	2 013	1.4
Maryland	1 702	.4	1 368	.2	584	.4
North Carolina	5 207	1.3	2 137	.4	1 147	.8
South Carolina	7 287	1.8	2 867	.5	1 859	1.3
Virginia	3 907	.9	3 689	.6	1 580	1.1
West Virginia	6 093	1.5	36 872	6.3	8 755	6.0
EAST SOUTH CENTRAL STATES						
Alabama	2 702	.7	2 219	.4	1 522	1.1
Kentucky	14 419	3.5	31 304	5.4	7 100	4.9
Mississippi	1 757	.4	1 255	.2	1 027	.7
Tennessee	8 978	2.2	2 777	.5	1 339	.9
WEST SOUTH CENTRAL STATES						
Arkansas	2 973	.7	2 322	.4	1 945	1.3
Louisiana	2 038	.5	4 526	.8	6 270	4.3
Oklahoma	1 428	.3	697	.1	666	.5
Texas	7 680	1.9	4 718	.8	6 855	4.7
MOUNTAIN STATES						
Arizona	2 413	.6	65	—	125	—
Colorado	853	.2	S	S	S	S
Idaho	273	—	490	—	903	.6
Montana	52	—	82	—	155	.1
Nevada	103	—	24	—	51	—
New Mexico	110	—	S	S	S	S
Utah	597	.1	S	S	S	S
Wyoming	138	—	7 899	1.4	11 556	8.0
PACIFIC STATES						
Alaska	S	S	S	S	S	S
California	16 263	3.9	2 418	.4	5 774	4.0
Hawaii	S	S	S	S	S	S
Oregon	1 206	.3	S	S	S	S
Washington	1 202	.3	284	—	663	.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.

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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	494 278	384 387	28.6	546 095	507 460	7.6	127 152	101 721	25.0	403	387	4.1
Single modes	421 855	322 789	30.7	517 685	474 428	9.1	115 000	92 534	24.3	198	176	12.2
Truck ²	377 110	295 097	27.8	387 982	395 426	-1.9	68 483	58 233	17.6	178	149	18.8
Rail	33 146	18 051	83.6	72 295	48 839	48.0	35 823	29 255	22.4	783	524	49.5
Water	1 082	1 240	-12.7	24 486	9 684	152.8	8 274	4 160	98.9	273	877	-68.9
Air (includes truck and air)	3 453	4 032	-14.4	124	199	-37.5	173	173	-2	1 189	1 058	12.3
Pipeline ³	7 065	4 369	61.7	32 798	20 280	61.7	S	S	S	S	S	S
Multiple modes	50 796	45 825	10.8	7 203	9 858	-26.9	6 841	5 533	23.6	664	620	7.2
Parcel, U.S. Postal Service or courier ..	46 468	37 110	25.2	1 642	1 347	21.9	1 050	786	33.5	663	618	7.4
Truck and rail	4 195	8 038	-47.8	1 733	2 074	-16.4	3 404	3 102	9.7	1 698	1 392	22.1
All other multiple modes	134	677	-80.2	S	6 436	S	S	1 645	S	S	S	S
Other and unknown modes ...	21 627	15 772	37.1	21 207	23 174	-8.5	5 312	3 654	45.4	139	74	88.3

- 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.
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	494 278	384 387	28.6	546 095	507 460	7.6	127 152	101 721	25.0	403	387	4.1
01-05	Agricultural products and fish	11 765	13 770	-14.6	46 864	46 207	1.4	S	20 392	S	263	110	138.2
06-09	Grains, alcohol, and tobacco products	31 749	28 505	11.4	32 462	29 882	8.6	12 417	8 145	52.5	S	56	S
10-14	Stones, nonmetallic minerals, and metallic ores	2 032	1 513	34.3	128 897	138 056	-6.6	5 161	7 837	-34.2	36	43	-16.4
15-19	Coal and petroleum products	20 864	16 299	28.0	103 491	106 807	-3.1	11 930	7 747	54.0	S	70	S
20-24	Basic chemicals, chemical, and pharmaceutical products	59 572	51 087	16.6	50 134	42 066	19.2	20 607	14 157	45.6	437	404	8.1
25-30	Logs, wood products, and textile and leather	43 750	29 275	49.4	19 984	18 344	8.9	5 412	5 498	-1.6	658	524	25.5
31-34	Base metal and machinery ..	97 752	102 135	-4.3	87 707	85 150	3.0	23 842	26 196	-9.0	368	484	-23.8
35-38	Electronic, motorized vehicles, and precision instruments	171 712	105 844	62.2	30 002	14 999	100.0	14 383	6 878	109.1	342	401	-14.8
39-43	Furniture, mixed freight and misc. manufactured prod. ..	54 059	33 066	63.5	45 537	22 018	106.8	7 402	4 598	61.0	505	473	6.7
--	Commodity unknown	1 021	2 893	-64.7	1 017	3 932	-74.1	640	274	133.5	254	286	-11.4

- 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.
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	8.9	—	9.6	—	18.0	—	10.0
Single modes	10.3	1.7	10.3	1.3	18.3	2.2	14.3
Truck	8.5	1.4	6.4	3.2	9.3	3.8	15.4
For-hire truck	12.2	2.0	11.3	2.0	11.1	2.9	10.3
Private truck	7.6	2.4	9.0	3.2	10.5	1.4	13.5
Rail	43.2	1.7	44.1	3.2	38.1	4.3	13.4
Water	32.8	—	31.4	1.0	39.1	2.1	33.6
Shallow draft	37.2	—	34.7	.9	39.5	2.0	26.3
Great Lakes	S	S	S	S	S	S	29.9
Deep draft	S	S	S	S	S	S	S
Air (includes truck and air)	11.8	.1	28.8	—	29.3	—	5.7
Pipeline	21.2	.3	23.3	1.8	S	S	S
Multiple modes	9.1	1.4	33.6	.5	37.0	1.4	6.2
Parcel, U.S. Postal Service or courier	10.7	1.4	10.1	—	11.4	.2	6.2
Truck and rail	32.1	.3	38.8	—	42.5	.5	10.8
Truck and water	49.3	—	44.2	—	47.9	—	24.7
Rail and water	S	S	S	S	S	S	29.8
Other multiple modes	S	S	S	S	S	S	S
Other and unknown modes	26.2	1.0	29.0	1.4	42.4	2.4	18.5

— 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-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	.8	1.3	.8	2.2	1.2
Truck	1.4	1.0	3.2	1.6	3.8	3.0
For-hire truck	2.0	.9	2.0	2.7	2.9	3.1
Private truck	2.4	1.0	3.2	2.3	1.4	.9
Rail	1.7	.8	3.2	1.6	4.3	3.9
Water	—	.1	1.0	.4	2.1	1.2
Shallow draft	—	—	.9	.4	2.0	1.2
Great Lakes	S	S	S	S	S	S
Deep draft	S	S	S	S	S	S
Air (includes truck and air) .....	.1	.1	—	—	—	—
Pipeline .....	.3	.3	1.8	.7	S	S
Multiple modes	1.4	.7	.5	.5	1.4	.9
Parcel, U.S. Postal Service or courier	1.4	.8	—	—	.2	.2
Truck and rail .....	.3	.4	—	—	.5	.5
Truck and water	—	—	—	—	—	—
Rail and water	S	S	S	S	S	S
Other multiple modes	S	—	S	.4	S	.5
Other and unknown modes	1.0	.4	1.4	.9	2.4	.8

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

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

Table B-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	18.0	—	10.0
Truck	9.3	3.8	15.4
Rail	38.1	4.3	13.4
Shallow draft	39.5	2.0	26.3
Great Lakes	S	S	29.9
Deep draft	S	S	S
Air	29.3	—	5.7
Parcel, U.S. Postal Service or courier	36.8	.8	32.9
Pipeline	S	S	S
Other and unknown modes	42.4	2.4	18.5

— 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-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	8.9	—	9.6	—	18.0	—
Less than 50 miles	7.9	2.1	6.0	2.9	6.5	.6
50 to 99 miles	15.7	.9	12.5	1.0	14.0	.6
100 to 249 miles	12.0	.8	11.7	1.0	13.1	2.4
250 to 499 miles	12.1	1.4	34.9	2.6	38.2	3.9
500 to 749 miles	9.3	.8	13.6	.5	17.0	1.9
750 to 999 miles	34.5	1.1	21.3	.3	23.6	1.7
1,000 to 1,499 miles	13.5	.4	21.3	.4	21.7	2.2
1,500 to 1,999 miles	8.0	.2	15.9	—	17.7	.7
2,000 miles or more	21.4	.3	15.6	—	15.1	.9
Single modes	10.3	—	10.3	—	18.3	—
Less than 50 miles	9.9	2.4	6.2	2.9	6.1	.7
50 to 99 miles	17.0	.9	12.9	1.0	14.4	.6
100 to 249 miles	13.2	.9	12.8	1.0	13.3	1.8
250 to 499 miles	13.1	1.6	36.6	2.7	39.8	4.4
500 to 749 miles	11.6	1.0	14.0	.6	17.3	2.1
750 to 999 miles	40.7	1.1	22.9	.3	24.5	2.0
1,000 to 1,499 miles	15.6	.5	24.2	.4	24.8	2.3
1,500 to 1,999 miles	10.3	.2	12.0	—	12.2	.7
2,000 miles or more	27.7	.3	19.7	—	19.1	1.0
Truck	8.5	—	6.4	—	9.3	—
Less than 50 miles	10.4	2.3	7.0	2.4	6.8	.7
50 to 99 miles	18.1	1.2	10.3	.7	9.4	.7
100 to 249 miles	14.2	1.3	5.8	.6	6.2	1.2
250 to 499 miles	11.8	1.8	24.9	2.2	20.8	2.6
500 to 749 miles	13.0	1.0	13.2	.4	13.0	1.0
750 to 999 miles	14.8	.2	8.3	.1	7.8	.6
1,000 to 1,499 miles	18.0	.5	15.3	.2	15.7	1.4
1,500 to 1,999 miles	10.9	.2	12.8	—	12.9	1.0
2,000 miles or more	31.3	.4	23.3	.1	22.9	1.4
For-hire truck	12.2	—	11.3	—	11.1	—
Less than 50 miles	12.2	1.5	11.7	2.5	9.5	.4
50 to 99 miles	27.8	1.6	15.8	1.2	16.0	.8
100 to 249 miles	18.0	1.6	9.6	1.1	9.5	1.0
250 to 499 miles	13.2	2.3	28.3	2.4	23.8	2.8
500 to 749 miles	16.6	1.1	13.7	.7	13.5	1.3
750 to 999 miles	15.2	.3	8.0	.2	7.6	.7
1,000 to 1,499 miles	16.5	.6	16.9	.4	17.2	1.9
1,500 to 1,999 miles	9.4	.2	13.6	.1	13.7	1.1
2,000 miles or more	35.9	.5	25.3	.2	24.9	1.7
Private truck	7.6	—	9.0	—	10.5	—
Less than 50 miles	11.7	2.9	10.3	2.7	11.1	3.0
50 to 99 miles	11.4	1.9	16.0	1.4	14.5	1.7
100 to 249 miles	14.5	2.0	13.9	1.2	15.0	2.4
250 to 499 miles	15.6	.9	18.1	.7	18.7	2.3
500 to 749 miles	32.5	1.4	16.5	.2	16.6	.9
750 to 999 miles	21.6	.1	44.4	.1	44.2	1.2
1,000 to 1,499 miles	37.3	.4	34.4	.1	35.2	1.6
1,500 to 1,999 miles	35.5	.4	30.1	—	30.3	1.3
2,000 miles or more	S	S	48.4	—	47.4	1.2
Rail	43.2	—	44.1	—	38.1	—
Less than 50 miles	46.3	2.9	S	S	46.7	.6
50 to 99 miles	29.1	.8	40.6	1.2	42.5	.2
100 to 249 miles	19.7	5.7	36.2	6.6	33.3	4.4
250 to 499 miles	S	S	S	S	S	S
500 to 749 miles	21.0	4.0	24.2	2.3	25.2	2.9
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	40.0	3.2	46.3	2.2	46.5	4.4
1,500 to 1,999 miles	26.8	.7	33.2	.4	33.0	1.2
2,000 miles or more	38.9	1.3	21.3	.5	21.3	1.9
Water	32.8	—	31.4	—	39.1	—
Less than 50 miles	45.7	11.3	33.8	11.5	49.8	10.4
50 to 99 miles	S	S	48.9	11.7	S	S
100 to 249 miles	26.0	14.8	33.7	12.3	35.3	15.5
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	43.4	13.5	48.3	8.6	48.2	16.8
750 to 999 miles	—	—	—	—	—	—
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—
Shallow draft	37.2	—	34.7	—	39.5	—
Less than 50 miles	43.2	11.9	43.0	11.3	S	S
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	25.9	15.4	32.5	13.9	35.1	16.4
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	43.4	14.2	48.3	8.6	48.2	16.1
750 to 999 miles	—	—	—	—	—	—
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—

See footnotes at end of table.

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

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

Mode of transportation and distance shipped (based on Great Circle Distance)	Value		Tons		Ton-miles	
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage
Single modes—Con.						
Great Lakes	S	S	S	S	S	S
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	—	—	—	—	—	—
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—
Deep draft	S	S	S	S	S	S
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	—	—	—	—	—	—
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—
Air (includes truck and air)	11.8	—	28.8	—	29.3	—
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	29.7	2.9	S	S	S	S
250 to 499 miles	23.6	5.1	41.9	7.3	35.9	4.2
500 to 749 miles	23.5	2.5	35.7	5.3	31.2	5.0
750 to 999 miles	21.8	2.6	S	S	S	S
1,000 to 1,499 miles	S	S	31.7	1.7	35.0	3.1
1,500 to 1,999 miles	39.1	6.2	S	S	S	S
2,000 miles or more	50.0	4.4	S	S	S	S
Pipeline	21.2	—	23.3	—	S	S
Less than 50 miles	28.6	12.3	27.8	11.5	S	S
50 to 99 miles	S	S	47.0	7.3	S	S
100 to 249 miles	45.5	8.4	44.3	8.5	S	S
250 to 499 miles	S	S	S	S	S	S
500 to 749 miles	—	—	—	—	S	S
750 to 999 miles	—	—	—	—	S	S
1,000 to 1,499 miles	—	—	—	—	S	S
1,500 to 1,999 miles	—	—	—	—	S	S
2,000 miles or more	—	—	—	—	S	S
Multiple modes	9.1	—	33.6	—	37.0	—
Less than 50 miles	27.5	1.6	18.0	2.0	11.9	—
50 to 99 miles	25.7	1.5	22.6	1.3	20.8	.1
100 to 249 miles	16.7	1.4	S	S	S	S
250 to 499 miles	8.3	1.9	19.3	4.1	20.3	2.0
500 to 749 miles	12.3	1.3	13.3	3.0	13.8	2.6
750 to 999 miles	15.5	1.1	S	S	S	S
1,000 to 1,499 miles	18.5	1.0	33.8	.6	34.2	1.3
1,500 to 1,999 miles	16.6	1.3	44.7	5.4	46.3	8.0
2,000 miles or more	14.9	.8	46.1	3.9	45.9	7.0
Parcel, U.S. Postal Service or courier	10.7	—	10.1	—	11.4	—
Less than 50 miles	27.6	1.5	18.4	2.3	11.9	—
50 to 99 miles	25.7	1.6	22.6	1.0	20.8	.1
100 to 249 miles	17.6	1.2	15.5	2.8	17.1	1.5
250 to 499 miles	8.4	2.1	13.8	2.0	14.0	1.6
500 to 749 miles	13.4	1.4	15.6	1.5	16.0	1.7
750 to 999 miles	13.6	1.2	17.8	1.7	18.0	3.1
1,000 to 1,499 miles	10.9	.5	13.2	.3	12.6	.5
1,500 to 1,999 miles	20.0	.9	30.8	1.5	31.5	4.6
2,000 miles or more	14.1	.7	13.7	.4	13.6	1.4
Truck and rail	32.1	—	38.8	—	42.5	—
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	S	S	S	S	47.4	2.4
500 to 749 miles	42.0	5.3	28.1	5.3	28.5	3.0
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	S	S	S	S	S	S
1,500 to 1,999 miles	32.9	9.5	S	S	S	S
2,000 miles or more	S	S	S	S	S	S
Truck and water	49.3	—	44.2	—	47.9	—
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	—	—	—	—	—	—
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	S	S	S	S	48.7	10.4

See footnotes at end of table.

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

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

Mode of transportation and distance shipped (based on Great Circle Distance)	Value		Tons		Ton-miles	
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage
Multiple modes—Con.						
Rail and water	S	S	S	S	S	S
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	—	—	—	—	—	—
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	S	S	S	S	S	S
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—
Other and unknown modes	26.2	—	29.0	—	42.4	—
Less than 50 miles	31.8	9.9	26.8	7.1	30.0	3.1
50 to 99 miles	22.4	.7	46.0	1.8	47.9	.5
100 to 249 miles	16.6	3.6	44.1	2.8	43.9	2.3
250 to 499 miles	31.3	4.9	44.4	2.5	45.8	4.0
500 to 749 miles	23.1	1.9	S	S	S	S
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	12.2	.6	45.3	1.9	45.7	5.9
1,500 to 1,999 miles	S	S	S	S	S	S
2,000 miles or more	49.1	.7	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	8.9	—	9.6	—	18.0	—	10.0
Less than 50 lb	8.6	1.1	9.0	—	11.2	—	12.3
50 to 99 lb	11.1	.4	10.3	—	11.7	—	13.2
100 to 499 lb	8.3	.8	11.7	.1	14.7	.2	16.8
500 to 749 lb	11.1	.4	18.3	—	11.5	.1	26.1
750 to 999 lb	16.0	.4	16.3	—	18.6	—	32.2
1,000 to 9,999 lb	11.6	2.2	8.6	.9	16.1	2.3	8.8
10,000 to 49,999 lb	11.2	1.2	7.8	3.3	8.6	3.3	7.1
50,000 to 99,999 lb	39.5	1.0	9.3	1.6	13.5	.9	9.4
100,000 lb or more	36.1	1.5	29.9	4.3	38.5	5.5	15.4
Single modes	10.3	—	10.3	—	18.3	—	14.3
Less than 50 lb	17.6	.6	15.9	—	18.0	—	18.8
50 to 99 lb	12.9	.3	18.6	—	12.2	—	22.1
100 to 499 lb	8.9	.8	12.9	.1	14.6	.1	21.1
500 to 749 lb	12.1	.4	18.7	—	13.4	—	23.8
750 to 999 lb	17.7	.5	15.3	—	20.0	.1	32.8
1,000 to 9,999 lb	8.3	2.1	7.2	.6	9.4	1.0	9.1
10,000 to 49,999 lb	11.8	1.2	8.0	3.3	7.4	4.2	6.7
50,000 to 99,999 lb	41.7	1.1	8.1	1.4	15.4	.9	9.1
100,000 lb or more	36.5	1.7	31.0	4.3	39.7	5.7	14.4
Truck²	8.5	—	6.4	—	9.3	—	15.4
Less than 50 lb	19.8	.6	16.2	—	23.0	—	17.3
50 to 99 lb	15.4	.3	18.9	—	14.0	—	22.5
100 to 499 lb	9.1	.8	13.0	.2	14.8	.2	21.6
500 to 749 lb	12.4	.3	18.8	.1	12.7	.1	24.0
750 to 999 lb	17.7	.6	15.3	—	20.1	.1	32.9
1,000 to 9,999 lb	9.2	2.3	7.9	.7	10.3	1.2	9.6
10,000 to 49,999 lb	12.1	1.8	7.9	2.8	7.7	2.3	7.1
50,000 to 99,999 lb	44.0	1.4	7.9	1.3	16.5	1.1	9.1
100,000 lb or more	34.5	.2	38.4	2.5	S	S	23.0
For-hire truck	12.2	—	11.3	—	11.1	—	10.3
Less than 50 lb	19.6	.2	24.2	—	29.8	—	13.7
50 to 99 lb	17.1	.1	11.8	—	17.8	—	12.5
100 to 499 lb	12.4	.5	21.0	.1	17.4	.2	15.1
500 to 749 lb	20.9	.4	35.3	.2	15.7	.1	23.2
750 to 999 lb	16.4	.2	30.1	.1	24.6	.1	27.2
1,000 to 9,999 lb	12.0	2.3	8.3	.5	9.2	1.1	8.3
10,000 to 49,999 lb	13.8	2.0	11.5	2.5	8.9	2.8	6.9
50,000 to 99,999 lb	S	S	8.3	1.8	18.0	1.1	16.5
100,000 lb or more	34.4	.2	S	S	S	S	30.6
Private truck	7.6	—	9.0	—	10.5	—	13.5
Less than 50 lb	25.6	1.5	17.7	—	28.6	—	15.5
50 to 99 lb	24.7	.8	23.5	—	22.1	—	12.0
100 to 499 lb	15.9	1.3	22.5	.3	20.3	.3	27.6
500 to 749 lb	22.4	.7	26.4	.2	22.6	.2	20.0
750 to 999 lb	32.9	1.5	22.2	.2	28.2	.1	8.2
1,000 to 9,999 lb	11.9	3.1	12.0	1.5	19.9	2.3	15.8
10,000 to 49,999 lb	9.1	2.5	10.8	3.9	10.7	3.1	15.3
50,000 to 99,999 lb	27.1	1.2	19.1	2.7	21.9	2.3	7.1
100,000 lb or more	48.1	.2	48.9	2.7	47.1	2.3	31.8
Rail	43.2	—	44.1	—	38.1	—	13.4
Less than 50 lb	S	S	S	S	S	S	31.6
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	S	S	S	S	S	S	32.8
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	41.6	4.1	41.8	.3	42.6	.8	13.5
10,000 to 49,999 lb	20.7	4.3	23.4	2.3	17.2	2.9	10.5
50,000 to 99,999 lb	22.6	2.1	23.0	.8	26.1	1.1	10.7
100,000 lb or more	S	S	46.3	3.0	42.2	3.9	18.6
Water	32.8	—	31.4	—	39.1	—	33.6
Less than 50 lb	S	S	S	S	S	S	31.6
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	S	S	S	S	S	S	31.6
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	—	—	—	—	—	—	—
10,000 to 49,999 lb	S	S	S	S	S	S	31.6
50,000 to 99,999 lb	S	S	S	S	S	S	31.6
100,000 lb or more	33.2	2.9	31.5	—	39.2	.2	24.4
Shallow draft	37.2	—	34.7	—	39.5	—	26.3
Less than 50 lb	S	S	S	S	S	S	31.6
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	—	—	—	—	—	—	—
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	—	—	—	—	—	—	—
10,000 to 49,999 lb	S	S	S	S	S	S	31.6
50,000 to 99,999 lb	S	S	S	S	S	S	31.6
100,000 lb or more	38.2	10.4	34.7	10.5	39.5	10.5	24.3

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	S	S	S	S	S	S	29.9
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	—	—	—	—	—	—	—
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	—	—	—	—	—	—	—
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	S	S	S	S	S	S	29.9
Deep draft	S	S	S	S	S	S	S
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	S	S	S	S	S	S	31.6
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	—	—	—	—	—	—	—
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	S	S	S	S	S	S	28.0
Air (includes truck and air)	11.8	—	28.8	—	29.3	—	5.7
Less than 50 lb	14.9	4.8	17.5	2.5	17.9	4.2	6.5
50 to 99 lb	37.1	5.2	31.6	3.3	31.0	3.3	9.0
100 to 499 lb	21.0	4.4	18.2	2.9	30.9	3.0	9.7
500 to 749 lb	S	S	36.1	2.8	S	S	24.3
750 to 999 lb	S	S	S	S	S	S	30.0
1,000 to 9,999 lb	35.4	4.4	37.8	7.8	39.2	9.0	19.4
10,000 to 49,999 lb	35.9	.7	S	S	S	S	41.7
50,000 to 99,999 lb	S	S	S	S	S	S	31.6
100,000 lb or more	—	—	—	—	—	—	—
Pipeline³	21.2	—	23.3	—	S	S	S
Less than 50 lb	—	—	—	—	S	S	S
50 to 99 lb	—	—	—	—	S	S	S
100 to 499 lb	S	S	S	S	S	S	S
500 to 749 lb	—	—	—	—	S	S	S
750 to 999 lb	—	—	—	—	S	S	S
1,000 to 9,999 lb	S	S	S	S	S	S	S
10,000 to 49,999 lb	S	S	S	S	S	S	S
50,000 to 99,999 lb	S	S	S	S	S	S	S
100,000 lb or more	21.2	10.1	23.3	10.0	S	S	S
Multiple modes	9.1	—	33.6	—	37.0	—	6.2
Less than 50 lb	7.4	3.5	9.3	4.6	12.5	3.1	7.0
50 to 99 lb	15.6	1.2	17.6	2.4	14.8	1.4	5.7
100 to 499 lb	15.9	1.4	17.5	5.0	19.8	3.7	7.0
500 to 749 lb	S	S	30.0	1.6	S	S	18.8
750 to 999 lb	41.2	.2	S	S	S	S	30.9
1,000 to 9,999 lb	S	S	48.4	.6	S	S	S
10,000 to 49,999 lb	40.2	2.4	49.2	5.2	S	S	7.7
50,000 to 99,999 lb	S	S	S	S	S	S	21.8
100,000 lb or more	39.8	.1	S	S	47.5	10.5	27.8
Parcel, U.S. Postal Service or courier	10.7	—	10.1	—	11.4	—	6.2
Less than 50 lb	7.4	3.0	9.3	3.8	12.5	5.6	7.0
50 to 99 lb	15.6	1.4	17.6	1.6	14.8	1.5	5.7
100 to 499 lb	15.9	1.4	17.5	3.5	19.8	3.9	7.0
500 to 749 lb	S	S	29.9	2.1	S	S	18.7
750 to 999 lb	41.2	.2	S	S	S	S	30.9
1,000 to 9,999 lb	S	S	S	S	S	S	31.4
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—
Truck and rail	32.1	—	38.8	—	42.5	—	10.8
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	—	—	—	—	—	—	—
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	40.4
10,000 to 49,999 lb	40.3	9.7	49.3	10.7	S	S	7.7
50,000 to 99,999 lb	S	S	S	S	S	S	22.2
100,000 lb or more	S	S	S	S	S	S	30.2
Truck and water	49.3	—	44.2	—	47.9	—	24.7
Less than 50 lb	S	S	S	S	S	S	29.8
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	S	S	S	S	S	S	31.6
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	30.4
10,000 to 49,999 lb	S	S	S	S	S	S	31.6
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—

See footnote at end of table.

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

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

Mode of transportation and shipment weight	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
Multiple modes—Con.							
Rail and water	S	S	S	S	S	S	29.8
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	—	—	—	—	—	—	—
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	—	—	—	—	—	—	—
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	S	S	S	S	S	S	29.8
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	—	—	—	—	—	—	—
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	S	S	S	S	S	S	31.6
10,000 to 49,999 lb	S	S	S	S	S	S	32.5
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	30.8
Other and unknown modes	26.2	—	29.0	—	42.4	—	18.5
Less than 50 lb	36.4	3.3	38.9	.2	S	S	S
50 to 99 lb	45.8	.8	37.2	—	38.4	—	47.8
100 to 499 lb	33.8	2.9	44.7	.5	S	S	S
500 to 749 lb	33.6	1.0	S	S	S	S	S
750 to 999 lb	S	S	48.6	.2	44.4	.1	S
1,000 to 9,999 lb	44.6	10.7	46.3	8.8	S	S	16.7
10,000 to 49,999 lb	35.7	5.4	20.2	4.6	33.7	9.0	30.0
50,000 to 99,999 lb	31.2	2.1	36.2	9.4	39.2	3.4	S
100,000 lb or more	S	S	41.6	4.8	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.

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	8.9	—	9.6	—	18.0	—	10.0
01	Live animals and live fish	28.4	—	31.6	—	35.7	—	23.2
02	Cereal grains	S	S	S	S	S	S	S
03	Other agricultural products	49.3	.3	36.5	.8	31.2	1.3	27.6
04	Animal feed and products of animal origin, n.e.c.	39.1	.2	35.3	.6	35.2	.9	28.4
05	Meat, fish, seafood, and their preparations	40.0	.3	40.2	.1	S	S	44.8
06	Milled grain products and preparations, and bakery products	28.7	.5	32.7	.3	38.0	.8	17.8
07	Other prepared foodstuffs and fats and oils	14.6	.5	12.7	.5	27.6	.6	S
08	Alcoholic beverages	44.0	.5	38.0	.5	S	S	S
09	Tobacco products	S	S	S	S	S	S	46.4
10	Monumental or building stone	S	S	S	S	S	S	26.8
11	Natural sands	29.0	—	21.9	1.1	28.1	.2	18.1
12	Gravel and crushed stone	17.9	—	17.7	3.1	18.8	.5	15.3
13	Nonmetallic minerals n.e.c.	48.5	—	45.3	.9	S	S	27.3
14	Metallic ores and concentrates	S	S	S	S	S	S	28.6
15	Coal	32.9	—	32.8	1.4	42.3	1.9	15.4
17	Gasoline and aviation turbine fuel	14.0	.3	15.0	1.7	24.8	.5	6.6
18	Fuel oils	28.0	.2	28.0	1.1	36.1	.4	8.5
19	Coal and petroleum products, n.e.c.	40.1	.2	44.4	.9	S	S	S
20	Basic chemicals	30.3	.4	41.0	1.4	35.7	1.4	22.2
21	Pharmaceutical products	20.3	1.0	S	S	S	S	14.1
22	Fertilizers	S	S	S	S	S	S	43.8
23	Chemical products and preparations, n.e.c.	14.4	.5	15.2	.3	19.8	1.1	14.3
24	Plastics and rubber	12.8	.6	17.6	.3	20.3	.9	10.0
25	Logs and other wood in the rough	S	S	35.8	—	28.4	—	S
26	Wood products	14.0	.2	23.0	.4	19.3	.3	24.9
27	Pulp, newsprint, paper, and paperboard	20.7	.2	25.8	.3	21.9	.5	36.2
28	Paper or paperboard articles	19.9	.2	24.0	.2	24.7	.2	46.8
29	Printed products	25.0	.4	49.1	.3	37.9	.3	8.0
30	Textiles, leather, and articles of textiles or leather	19.1	1.0	26.6	.1	22.0	.1	11.4
31	Nonmetallic mineral products	27.5	.6	27.5	1.9	40.9	2.5	29.5
32	Base metal in primary or semifinished forms and in finished basic shapes	12.0	.7	17.2	1.1	22.4	1.9	13.8
33	Articles of base metal	12.6	.4	24.9	.6	19.0	1.0	6.3
34	Machinery	10.1	1.1	12.0	.1	20.8	.6	17.0
35	Electronic and other electrical equipment and components and office equipment	35.4	2.7	41.8	.4	46.4	1.3	25.1
36	Motorized and other vehicles (including parts)	36.0	4.5	29.9	1.2	41.4	3.6	41.8
37	Transportation equipment, n.e.c.	38.2	.8	40.7	—	37.3	—	17.3
38	Precision instruments and apparatus	16.5	.2	19.6	—	28.8	—	25.5
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	19.4	.3	13.6	—	17.6	.2	9.7
40	Miscellaneous manufactured products	11.9	.5	S	S	38.5	.6	8.8
41	Waste and scrap	S	S	S	S	S	S	19.5
43	Mixed freight	16.3	1.1	15.8	.4	27.9	.6	24.7
--	Commodity unknown	20.2	—	37.2	.1	47.7	.3	27.8

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

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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	-	-	-	-	-	-
02	Cereal grains	S	.1	S	1.2	S	3.6
03	Other agricultural products .....	.3	.1	.8	.4	1.3	1.4
04	Animal feed and products of animal origin, n.e.c. ....	.2	.1	.6	.2	.9	.6
05	Meat, fish, seafood, and their preparations .....	.3	.1	.1	-	S	-
06	Milled grain products and preparations, and bakery products .....	.5	.2	.3	.2	.8	.4
07	Other prepared foodstuffs and fats and oils .....	.5	.6	.5	.4	.6	.7
08	Alcoholic beverages .....	.5	.1	.5	.1	.6	.1
09	Tobacco products .....	.6	-	.5	-	.6	-
10	Monumental or building stone	S	S	S	S	S	S
11	Natural sands	-	-	1.1	S	.2	S
12	Gravel and crushed stone	-	-	3.1	1.8	.5	.6
13	Nonmetallic minerals n.e.c.	-	-	.9	.9	S	.6
14	Metallic ores and concentrates	S	S	S	S	S	S
15	Coal	-	-	1.4	1.5	1.9	.8
17	Gasoline and aviation turbine fuel .....	.3	.3	1.7	1.0	.5	.2
18	Fuel oils .....	.2	-	1.1	.5	.4	-
19	Coal and petroleum products, n.e.c. ....	.2	-	.9	.5	.6	.2
20	Basic chemicals .....	.4	.2	1.4	.5	1.4	.5
21	Pharmaceutical products	1.0	.4	S	-	S	-
22	Fertilizers	S	S	S	S	S	S
23	Chemical products and preparations, n.e.c. ....	.5	.4	.3	.1	1.1	.6
24	Plastics and rubber .....	.6	.5	.3	.1	.9	.3
25	Logs and other wood in the rough	S	-	-	-	-	S
26	Wood products .....	.2	.1	.4	.4	.3	.4
27	Pulp, newsprint, paper, and paperboard .....	.2	.2	.3	.2	.5	.5
28	Paper or paperboard articles .....	.2	.1	.2	.2	.2	-
29	Printed products .....	.4	.2	.3	-	.3	.2
30	Textiles, leather, and articles of textiles or leather	1.0	.5	.1	-	.1	.3
31	Nonmetallic mineral products .....	.6	.2	1.9	.7	2.5	.4
32	Base metal in primary or semifinished forms and in finished basic shapes .....	.7	.9	1.1	.8	1.9	1.3
33	Articles of base metal .....	.4	.7	.6	.3	1.0	1.3
34	Machinery	1.1	.7	.1	.1	.6	.8
35	Electronic and other electrical equipment and components and office equipment	2.7	.4	.4	-	1.3	.3
36	Motorized and other vehicles (including parts)	4.5	2.3	1.2	.4	3.6	.7
37	Transportation equipment, n.e.c. ....	.8	.2	-	-	-	-
38	Precision instruments and apparatus .....	.2	.1	-	-	-	-
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs .....	.3	.2	-	.1	.2	.5
40	Miscellaneous manufactured products .....	.5	.7	S	-	.6	.3
41	Waste and scrap	S	.1	S	.3	S	.5
43	Mixed freight	1.1	.3	.4	.2	.6	.2
--	Commodity unknown	-	.2	.1	.2	.3	-

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

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

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

Table B-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	8.9	—	9.6	—	18.0	—	10.0
Single modes	10.3	1.7	10.3	1.3	18.3	2.2	14.3
Truck	8.5	1.4	6.4	3.2	9.3	3.8	15.4
For-hire truck	12.2	2.0	11.3	2.0	11.1	2.9	10.3
Private truck	7.6	2.4	9.0	3.2	10.5	1.4	13.5
Rail	43.2	1.7	44.1	3.2	38.1	4.3	13.4
Water	32.8	—	31.4	1.0	39.1	2.1	33.6
Shallow draft	37.2	—	34.7	.9	39.5	2.0	26.3
Great Lakes	S	S	S	S	S	S	29.9
Deep draft	S	S	S	S	S	S	S
Air (includes truck and air)	11.8	.1	28.8	—	29.3	—	5.7
Pipeline	21.2	.3	23.3	1.8	S	S	S
Multiple modes	9.1	1.4	33.6	.5	37.0	1.4	6.2
Parcel, U.S. Postal Service or courier	10.7	1.4	10.1	—	11.4	.2	6.2
Truck and rail	32.1	.3	38.8	—	42.5	.5	10.8
Truck and water	49.3	—	44.2	—	47.9	—	24.7
Rail and water	S	S	S	S	S	S	29.8
Other multiple modes	S	S	S	S	S	S	S
Other and unknown modes	26.2	1.0	29.0	1.4	42.4	2.4	18.5
SCTG 01, LIVE ANIMALS AND LIVE FISH							
Total	28.4	—	31.6	—	35.7	—	23.2
Single modes	28.4	—	31.6	—	35.7	—	23.2
Truck	28.4	—	31.6	—	35.7	—	23.2
For-hire truck	S	S	S	S	S	S	27.9
Private truck	42.0	15.1	42.2	15.7	42.9	16.4	27.8
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	S	S	S	S	S	S	S
Single modes	S	S	S	S	S	S	S
Truck	S	S	S	S	S	S	27.6
For-hire truck	S	S	S	S	S	S	27.4
Private truck	S	S	S	S	S	S	31.6
Rail	S	S	S	S	S	S	23.5
Water	44.6	13.4	S	S	S	S	27.9
Shallow draft	S	S	S	S	S	S	27.9
Great Lakes	S	S	S	S	S	S	31.6
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

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	49.3	—	36.5	—	31.2	—	27.6
Single modes	49.4	.6	36.5	—	31.2	—	33.5
Truck	S	S	S	S	S	S	30.0
For-hire truck	S	S	S	S	S	S	25.5
Private truck	S	S	S	S	S	S	28.9
Rail	S	S	S	S	S	S	21.4
Water	47.2	9.7	48.2	11.0	49.0	14.2	25.9
Shallow draft	47.2	9.7	48.2	11.0	49.0	14.2	25.9
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	28.0
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	28.0
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 04, ANIMAL FEED AND PRODUCTS OF ANIMAL ORIGIN, N.E.C.							
Total	39.1	—	35.3	—	35.2	—	28.4
Single modes	38.8	1.2	34.5	1.2	34.6	.6	24.0
Truck	40.5	9.1	39.9	10.7	45.0	13.6	25.3
For-hire truck	38.3	8.9	39.8	11.1	44.1	13.0	24.5
Private truck	S	S	43.7	5.1	S	S	23.9
Rail	42.9	9.8	38.1	11.3	36.0	13.9	22.8
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	S
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	S
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	36.4
SCTG 05, MEAT, FISH, SEAFOOD, AND THEIR PREPARATIONS							
Total	40.0	—	40.2	—	S	S	44.8
Single modes	40.1	.3	40.3	.4	S	S	44.7
Truck	40.1	.3	40.3	.4	S	S	44.7
For-hire truck	43.1	10.4	43.1	9.8	S	S	20.3
Private truck	S	S	43.4	9.5	43.8	5.2	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	S

See footnote at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
SCTG 06, MILLED GRAIN PRODUCTS AND PREPARATIONS, AND BAKERY PRODUCTS							
Total	28.7	—	32.7	—	38.0	—	17.8
Single modes	28.8	1.5	30.2	2.1	29.7	6.8	18.6
Truck	29.0	1.5	30.3	2.1	30.0	7.0	18.9
For-hire truck	33.5	6.9	32.8	6.9	32.1	7.9	12.2
Private truck	39.1	7.1	S	S	S	S	24.9
Rail	30.5	.4	34.2	.7	38.8	3.0	21.6
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	46.8	1.5	S	S	S	S	27.3
Parcel, U.S. Postal Service or courier	S	S	42.1	—	39.4	—	20.1
Truck and rail	S	S	S	S	S	S	29.8
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—
SCTG 07, OTHER PREPARED FOODSTUFFS AND FATS AND OILS							
Total	14.6	—	12.7	—	27.6	—	S
Single modes	14.4	1.4	12.6	1.1	19.9	4.2	S
Truck	15.1	2.5	14.2	4.2	23.5	8.0	S
For-hire truck	20.8	6.1	22.5	8.8	28.3	7.8	S
Private truck	20.7	7.3	30.0	9.0	18.7	4.7	S
Rail	24.8	2.2	27.0	4.2	30.6	7.7	21.6
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	31.6
Pipeline	S	S	S	S	S	S	S
Multiple modes	S	S	S	S	S	S	23.6
Parcel, U.S. Postal Service or courier	S	S	S	S	40.3	—	43.4
Truck and rail	S	S	S	S	S	S	29.8
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	35.3
SCTG 08, ALCOHOLIC BEVERAGES							
Total	44.0	—	38.0	—	S	S	S
Single modes	44.3	.7	38.1	.6	S	S	S
Truck	44.6	2.0	38.2	2.0	S	S	S
For-hire truck	34.2	13.2	42.9	11.4	S	S	23.4
Private truck	S	S	S	S	S	S	S
Rail	43.9	2.0	44.5	2.0	49.6	3.3	26.2
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	31.5
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	31.5
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	31.6

See footnote at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
SCTG 09, TOBACCO PRODUCTS							
Total	S	S	S	S	S	S	46.4
Single modes	S	S	S	S	S	S	46.4
Truck	S	S	S	S	S	S	46.4
For-hire truck	—	—	—	—	—	—	—
Private truck	S	S	S	S	S	S	46.4
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	—	—	—	—	—	—	—
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—
SCTG 10, MONUMENTAL OR BUILDING STONE							
Total	S	S	S	S	S	S	26.8
Single modes	S	S	S	S	S	S	26.6
Truck	S	S	S	S	S	S	26.6
For-hire truck	S	S	S	S	S	S	31.6
Private truck	S	S	S	S	S	S	27.2
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	—	—	—	—	—	—	—
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	31.6
SCTG 11, NATURAL SANDS							
Total	29.0	—	21.9	—	28.1	—	18.1
Single modes	29.2	2.6	23.5	4.5	27.6	2.7	20.8
Truck	29.6	3.7	24.0	5.1	27.7	2.8	20.8
For-hire truck	40.0	7.9	35.7	8.0	37.0	6.9	27.2
Private truck	29.7	8.7	32.1	8.3	29.7	7.5	31.3
Rail	—	—	—	—	—	—	—
Water	S	S	S	S	S	S	29.8
Shallow draft	S	S	S	S	S	S	29.8
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	S
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	S
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	38.6	2.3	44.7	4.5	42.5	2.7	24.1

See footnote at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
SCTG 12, GRAVEL AND CRUSHED STONE							
Total	17.9	—	17.7	—	18.8	—	15.3
Single modes	18.3	3.3	18.4	3.9	19.7	3.7	15.2
Truck	18.7	3.0	19.0	3.7	21.1	5.3	15.2
For-hire truck	25.1	6.6	27.4	6.5	25.4	5.8	16.8
Private truck	24.6	6.1	23.7	6.4	27.0	7.1	16.7
Rail	—	—	—	—	—	—	—
Water	48.1	1.5	S	S	S	S	26.1
Shallow draft	—	—	—	—	—	—	—
Great Lakes	S	S	S	S	S	S	31.6
Deep draft	S	S	S	S	S	S	28.0
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	37.7	3.3	39.5	3.9	39.4	3.7	20.6
SCTG 13, NONMETALLIC MINERALS N.E.C.							
Total	48.5	—	45.3	—	S	S	27.3
Single modes	S	S	45.4	.2	S	S	31.0
Truck	S	S	S	S	42.0	14.9	25.9
For-hire truck	S	S	S	S	S	S	45.8
Private truck	35.4	13.4	45.4	13.2	37.9	12.1	48.0
Rail	S	S	S	S	S	S	30.8
Water	S	S	S	S	S	S	S
Shallow draft	S	S	S	S	S	S	31.6
Great Lakes	S	S	S	S	S	S	29.9
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	31.6
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	30.1
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	30.1
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	40.8
SCTG 14, METALLIC ORES AND CONCENTRATES							
Total	S	S	S	S	S	S	28.6
Single modes	S	S	S	S	S	S	28.2
Truck	S	S	S	S	S	S	28.8
For-hire truck	S	S	S	S	S	S	S
Private truck	S	S	S	S	S	S	31.4
Rail	S	S	S	S	S	S	31.6
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	S	S	S	S	S	S	31.6
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	31.6

See footnote at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
SCTG 15, COAL							
Total	32.9	—	32.8	—	42.3	—	15.4
Single modes	31.4	4.8	31.4	4.4	34.3	11.6	18.6
Truck	28.8	12.3	32.7	12.3	26.4	12.9	21.3
For-hire truck	39.5	11.9	41.4	11.8	39.1	11.5	24.8
Private truck	42.0	10.2	41.3	10.3	41.0	7.6	24.6
Rail	S	S	S	S	S	S	S
Water	47.2	10.3	46.6	10.3	42.7	9.6	22.8
Shallow draft	47.2	10.3	46.6	10.3	42.7	9.6	22.8
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	35.5
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	—	—	—	—	—	—	—
Rail and water	S	S	S	S	S	S	29.8
Other multiple modes	S	S	S	S	S	S	31.6
Other and unknown modes	—	—	—	—	—	—	—
SCTG 17, GASOLINE AND AVIATION TURBINE FUEL							
Total	14.0	—	15.0	—	24.8	—	6.6
Single modes	14.4	.8	15.3	.6	25.1	1.4	6.7
Truck	25.7	9.2	22.5	9.1	19.9	14.3	7.5
For-hire truck	22.7	3.5	17.6	4.1	14.1	8.8	9.7
Private truck	30.9	7.2	30.8	6.9	35.1	7.9	8.0
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	31.6
Pipeline	20.2	9.0	23.3	9.0	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	40.6	.8	40.2	.6	42.9	1.4	23.9
SCTG 18, FUEL OILS							
Total	28.0	—	28.0	—	36.1	—	8.5
Single modes	29.1	3.3	28.9	2.9	36.7	5.0	10.5
Truck	47.8	12.9	S	S	S	S	9.7
For-hire truck	42.2	4.7	41.6	5.7	44.7	7.8	13.0
Private truck	S	S	S	S	S	S	10.8
Rail	S	S	S	S	S	S	31.6
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	40.6	13.2	39.9	13.6	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	42.6	3.3	42.6	2.9	41.5	5.0	26.4

See footnote at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
SCTG 19, COAL AND PETROLEUM PRODUCTS, N.E.C.							
Total	40.1	—	44.4	—	S	S	S
Single modes	40.3	1.8	44.4	—	S	S	46.1
Truck	44.0	11.7	S	S	S	S	43.8
For-hire truck	S	S	S	S	S	S	20.6
Private truck	S	S	37.7	7.5	26.5	5.4	S
Rail	46.1	8.3	32.1	8.1	37.9	14.9	23.1
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	S	S	S	S	S	S	S
Multiple modes	S	S	S	S	S	S	31.8
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	31.8
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	37.6
SCTG 20, BASIC CHEMICALS							
Total	30.3	—	41.0	—	35.7	—	22.2
Single modes	30.5	1.8	41.4	1.6	36.9	2.2	29.2
Truck	30.0	5.1	48.4	7.7	39.3	9.4	32.2
For-hire truck	34.0	6.4	S	S	42.9	7.5	22.1
Private truck	37.0	8.0	42.3	10.8	S	S	26.2
Rail	33.0	4.1	S	S	47.6	9.7	22.8
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	25.3
Pipeline	S	S	S	S	S	S	S
Multiple modes	S	S	S	S	S	S	23.0
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	22.0
Truck and rail	S	S	S	S	S	S	27.9
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	29.8
SCTG 21, PHARMACEUTICAL PRODUCTS							
Total	20.3	—	S	S	S	S	14.1
Single modes	13.7	9.9	S	S	S	S	S
Truck	14.3	9.7	S	S	S	S	S
For-hire truck	27.1	14.2	42.7	19.5	29.2	19.2	S
Private truck	39.1	7.7	36.1	14.3	S	S	23.9
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	49.1	.5	43.6	2.1	22.6
Pipeline	—	—	—	—	S	S	S
Multiple modes	45.0	8.2	S	S	S	S	18.9
Parcel, U.S. Postal Service or courier	45.0	8.2	S	S	S	S	18.9
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	27.8

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 22, FERTILIZERS							
Total	S	S	S	S	S	S	43.8
Single modes	S	S	S	S	S	S	S
Truck	S	S	S	S	S	S	S
For-hire truck	S	S	S	S	S	S	22.8
Private truck	34.4	13.5	46.1	16.8	41.3	14.9	39.7
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	28.3
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	31.6
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	31.6
SCTG 23, CHEMICAL PRODUCTS AND PREPARATIONS, N.E.C.							
Total	14.4	—	15.2	—	19.8	—	14.3
Single modes	13.9	2.6	15.6	1.5	21.7	5.2	21.9
Truck	14.7	2.6	16.6	3.9	23.2	4.7	22.1
For-hire truck	14.5	4.9	13.3	4.8	19.0	4.4	11.2
Private truck	31.4	4.6	40.9	4.6	49.2	4.6	S
Rail	44.1	2.0	39.8	4.4	37.8	4.4	25.7
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	21.2
Pipeline	—	—	—	—	S	S	S
Multiple modes	42.7	2.6	38.5	1.4	46.6	4.9	18.1
Parcel, U.S. Postal Service or courier	38.5	1.4	38.0	.3	38.9	.3	18.1
Truck and rail	S	S	41.5	1.2	47.7	4.7	24.2
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	33.8	—	41.1	.1	S	S	S
SCTG 24, PLASTICS AND RUBBER							
Total	12.8	—	17.6	—	20.3	—	10.0
Single modes	12.4	1.6	18.3	1.5	21.0	1.1	14.5
Truck	12.7	2.2	13.1	4.9	14.4	6.9	15.1
For-hire truck	12.2	1.6	13.7	3.8	14.4	5.8	8.1
Private truck	18.8	1.5	20.8	2.8	25.9	2.4	S
Rail	S	S	S	S	S	S	25.0
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	38.6	—	S	S	19.2
Pipeline	—	—	—	—	S	S	S
Multiple modes	29.2	1.1	26.6	.3	32.4	.5	9.4
Parcel, U.S. Postal Service or courier	29.2	1.1	26.5	.3	31.3	.5	9.4
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	31.6
Other and unknown modes	S	S	S	S	45.1	.9	S

See footnote at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
SCTG 25, LOGS AND OTHER WOOD IN THE ROUGH							
Total	S	S	35.8	—	28.4	—	S
Single modes	S	S	36.4	8.5	32.4	11.5	S
Truck	S	S	36.4	8.5	32.4	11.5	S
For-hire truck	S	S	45.4	11.9	34.6	12.8	44.0
Private truck	S	S	S	S	S	S	29.0
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	28.9
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	S	S	S	S	S	S	28.9
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—
SCTG 26, WOOD PRODUCTS							
Total	14.0	—	23.0	—	19.3	—	24.9
Single modes	15.8	5.3	24.6	4.5	20.1	4.0	26.1
Truck	15.9	5.5	24.9	4.9	20.0	4.9	25.9
For-hire truck	27.3	6.5	23.8	6.3	23.3	6.8	17.6
Private truck	19.3	6.2	35.5	5.9	39.7	6.6	24.4
Rail	47.1	.2	45.8	.8	S	S	36.5
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	44.9
Pipeline	—	—	—	—	S	S	S
Multiple modes	37.1	1.1	48.3	.1	43.2	.9	23.6
Parcel, U.S. Postal Service or courier	33.6	.3	45.8	—	43.1	.1	23.7
Truck and rail	S	S	S	S	45.9	1.0	27.3
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 27, PULP, NEWSPRINT, PAPER, AND PAPERBOARD							
Total	20.7	—	25.8	—	21.9	—	36.2
Single modes	20.5	.9	25.8	1.0	21.7	.6	37.4
Truck	21.1	1.6	27.2	3.0	23.5	4.7	36.0
For-hire truck	15.6	8.5	20.8	9.4	25.6	7.2	33.5
Private truck	S	S	S	S	S	S	48.0
Rail	31.5	1.3	30.0	3.0	35.3	4.7	21.9
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	29.0
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	34.5
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	34.6
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	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	19.9	—	24.0	—	24.7	—	46.8
Single modes	22.7	5.9	24.5	1.9	25.4	1.8	S
Truck	22.8	5.8	24.5	1.9	24.9	1.8	S
For-hire truck	21.9	8.7	30.0	9.8	26.6	5.4	24.7
Private truck	42.3	8.5	47.7	9.9	35.6	4.7	S
Rail	S	S	46.0	.4	S	S	28.4
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	18.8
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	18.8
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	29.7
SCTG 29, PRINTED PRODUCTS							
Total	25.0	—	49.1	—	37.9	—	8.0
Single modes	42.4	10.2	30.4	13.9	46.6	8.7	24.2
Truck	42.6	10.2	30.5	13.8	47.0	8.5	24.2
For-hire truck	24.5	6.6	35.2	12.3	45.1	12.1	17.1
Private truck	S	S	S	S	S	S	30.8
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	23.8
Pipeline	—	—	—	—	S	S	S
Multiple modes	23.0	8.7	22.0	6.2	18.2	6.8	9.3
Parcel, U.S. Postal Service or courier	23.0	8.7	22.0	6.2	18.2	6.8	9.3
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	35.6
SCTG 30, TEXTILES, LEATHER, AND ARTICLES OF TEXTILES OR LEATHER							
Total	19.1	—	26.6	—	22.0	—	11.4
Single modes	18.2	5.4	26.8	3.6	28.4	7.3	12.7
Truck	18.2	5.4	26.8	3.6	28.5	7.2	12.7
For-hire truck	16.1	5.0	28.1	6.4	25.3	7.0	9.6
Private truck	45.6	1.6	S	S	S	S	21.4
Rail	S	S	S	S	S	S	28.5
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)	41.8	—	S	S	S	S	27.1
Pipeline	—	—	—	—	S	S	S
Multiple modes	24.6	3.5	32.9	2.4	36.0	4.2	12.1
Parcel, U.S. Postal Service or courier	24.6	3.5	32.9	2.4	36.0	4.2	12.1
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S

See footnote at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
SCTG 31, NONMETALLIC MINERAL PRODUCTS							
Total	27.5	—	27.5	—	40.9	—	29.5
Single modes	28.7	3.2	28.3	3.9	40.2	4.7	31.7
Truck	28.8	3.2	29.2	4.6	40.5	6.4	31.3
For-hire truck	41.8	6.3	46.0	8.5	43.3	6.0	10.7
Private truck	18.5	6.2	40.8	10.6	28.5	5.8	33.0
Rail	S	S	S	S	S	S	31.5
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	41.3	—	44.1	—	42.6	—	10.1
Pipeline	—	—	—	—	S	S	S
Multiple modes	39.5	1.0	S	S	S	S	8.5
Parcel, U.S. Postal Service or courier	49.8	1.0	37.4	—	47.4	—	9.6
Truck and rail	S	S	S	S	S	S	36.1
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	28.9
SCTG 32, BASE METAL IN PRIMARY OR SEMIFINISHED FORMS AND IN FINISHED BASIC SHAPES							
Total	12.0	—	17.2	—	22.4	—	13.8
Single modes	11.7	1.2	17.0	.7	22.6	1.3	13.6
Truck	11.5	3.0	14.2	4.8	12.4	6.6	14.4
For-hire truck	12.1	4.5	13.4	7.0	12.5	7.1	12.6
Private truck	22.6	2.4	43.3	3.1	38.2	1.2	17.0
Rail	25.4	2.1	37.3	4.3	S	S	16.6
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	32.9	.1	49.5	—	S	S	20.7
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	25.0
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	25.1
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	30.9
Other and unknown modes	S	S	49.1	.3	S	S	38.7
SCTG 33, ARTICLES OF BASE METAL							
Total	12.6	—	24.9	—	19.0	—	6.3
Single modes	12.4	4.3	24.7	1.1	19.4	2.0	10.3
Truck	12.9	4.4	24.6	4.4	17.8	7.6	11.3
For-hire truck	15.1	5.5	16.9	7.5	20.8	7.8	8.9
Private truck	23.0	3.8	S	S	41.2	4.1	20.9
Rail	47.6	1.3	S	S	S	S	26.3
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	35.3	.5	S	S	S	S	5.5
Pipeline	—	—	—	—	S	S	S
Multiple modes	30.9	4.3	29.1	.5	28.8	.6	7.3
Parcel, U.S. Postal Service or courier	31.1	4.3	33.1	.5	31.9	.7	7.3
Truck and rail	S	S	S	S	S	S	32.2
Truck and water	S	S	S	S	S	S	29.8
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	26.3	1.7	49.6	.9	44.2	1.8	45.2

See footnote at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
SCTG 34, MACHINERY							
Total	10.1	—	12.0	—	20.8	—	17.0
Single modes	12.2	2.8	12.4	1.8	14.7	6.0	16.1
Truck	12.2	2.8	14.0	3.5	13.3	7.2	17.7
For-hire truck	14.3	3.9	11.1	2.9	14.8	5.6	10.6
Private truck	26.0	4.0	28.0	4.5	28.2	3.2	21.7
Rail	33.3	1.4	32.2	2.4	37.4	4.8	24.0
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	38.1	.4	41.7	.1	S	S	11.9
Pipeline	—	—	—	—	S	S	S
Multiple modes	23.1	2.7	S	S	S	S	11.9
Parcel, U.S. Postal Service or courier	25.6	2.8	9.8	.2	12.9	.4	11.8
Truck and rail	S	S	S	S	S	S	27.0
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	27.9	.8	29.0	.9	S	S	S
SCTG 35, ELECTRONIC AND OTHER ELECTRICAL EQUIPMENT AND COMPONENTS AND OFFICE EQUIPMENT							
Total	35.4	—	41.8	—	46.4	—	25.1
Single modes	46.4	6.5	46.4	6.2	S	S	40.4
Truck	47.6	7.1	42.6	5.2	S	S	40.8
For-hire truck	S	S	44.7	5.4	49.1	7.0	13.7
Private truck	45.4	4.5	45.1	6.1	S	S	S
Rail	S	S	S	S	S	S	S
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	29.5	1.1	22.3	.2	22.9	.2	10.0
Pipeline	—	—	—	—	S	S	S
Multiple modes	17.3	7.0	19.3	6.7	32.7	9.4	10.5
Parcel, U.S. Postal Service or courier	18.9	6.3	20.5	2.0	26.8	2.0	10.4
Truck and rail	47.4	2.0	45.7	5.8	S	S	21.7
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	31.6
Other and unknown modes	S	S	S	S	S	S	S
SCTG 36, MOTORIZED AND OTHER VEHICLES (INCLUDING PARTS)							
Total	36.0	—	29.9	—	41.4	—	41.8
Single modes	41.6	5.9	32.0	3.4	43.0	3.7	S
Truck	33.4	5.1	24.5	3.8	30.8	5.8	S
For-hire truck	38.5	6.3	30.4	6.6	34.9	7.0	8.4
Private truck	23.9	3.3	S	S	S	S	S
Rail	S	S	S	S	S	S	14.4
Water	S	S	S	S	S	S	31.6
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	S	S	S	S	S	S	31.6
Air (includes truck and air)	45.2	—	39.7	—	46.1	—	19.3
Pipeline	—	—	—	—	S	S	S
Multiple modes	49.5	2.0	S	S	S	S	13.3
Parcel, U.S. Postal Service or courier	40.9	.8	28.8	.2	31.1	.2	13.5
Truck and rail	S	S	S	S	S	S	21.4
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	49.5	5.3	S	S	46.5	.4	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	38.2	—	40.7	—	37.3	—	17.3
Single modes	40.1	11.9	41.2	11.1	38.0	15.2	21.4
Truck	41.3	12.3	44.6	8.6	44.0	9.0	22.6
For-hire truck	S	S	45.8	10.0	48.4	9.1	25.7
Private truck	S	S	S	S	S	S	28.4
Rail	44.7	.3	44.7	8.9	43.9	11.4	26.1
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	21.5
Pipeline	—	—	—	—	S	S	S
Multiple modes	48.5	11.9	S	S	S	S	14.5
Parcel, U.S. Postal Service or courier	48.5	11.9	S	S	S	S	14.5
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	31.6
SCTG 38, PRECISION INSTRUMENTS AND APPARATUS							
Total	16.5	—	19.6	—	28.8	—	25.5
Single modes	17.7	6.0	19.1	2.3	29.4	3.4	22.6
Truck	16.9	6.9	19.4	2.8	30.5	4.4	45.2
For-hire truck	15.9	7.2	27.8	7.4	33.2	7.4	24.3
Private truck	49.1	5.3	39.3	8.0	30.6	3.9	S
Rail	—	—	—	—	—	—	—
Water	S	S	S	S	S	S	31.6
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	S	S	S	S	S	S	31.6
Air (includes truck and air)	S	S	41.6	1.3	44.6	1.7	19.4
Pipeline	—	—	—	—	S	S	S
Multiple modes	28.1	6.2	23.3	2.3	15.4	4.0	28.7
Parcel, U.S. Postal Service or courier	28.1	6.2	23.3	2.3	15.4	4.0	28.9
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	31.5
SCTG 39, FURNITURE, MATTRESSES AND MATTRESS SUPPORTS, LAMPS, LIGHTING FITTINGS, AND ILLUMINATED SIGNS							
Total	19.4	—	13.6	—	17.6	—	9.7
Single modes	23.1	5.1	14.1	1.7	18.0	3.1	26.2
Truck	23.1	5.2	14.1	1.7	18.0	3.1	26.8
For-hire truck	23.3	7.7	22.8	9.9	27.9	9.2	16.6
Private truck	43.6	8.5	26.6	10.5	34.0	10.1	S
Rail	S	S	S	S	S	S	27.9
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	35.5
Pipeline	—	—	—	—	S	S	S
Multiple modes	42.9	5.1	41.9	1.7	38.0	3.1	7.3
Parcel, U.S. Postal Service or courier	43.0	5.1	42.0	1.7	38.1	3.1	7.2
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S

See footnote at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
SCTG 40, MISCELLANEOUS MANUFACTURED PRODUCTS							
Total	11.9	—	S	S	38.5	—	8.8
Single modes	19.4	7.0	S	S	40.4	2.9	20.4
Truck	19.9	7.3	S	S	36.8	2.9	21.0
For-hire truck	26.8	6.1	47.3	10.4	44.6	7.1	10.7
Private truck	15.7	3.4	S	S	42.5	8.0	48.8
Rail	S	S	S	S	S	S	29.8
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	18.1
Pipeline	—	—	—	—	S	S	S
Multiple modes	23.4	7.0	32.7	2.3	33.0	2.8	5.5
Parcel, U.S. Postal Service or courier	24.0	7.1	27.5	2.1	32.3	2.7	5.5
Truck and rail	S	S	S	S	S	S	39.8
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	30.8	.5	37.2	.3	37.9	.2	S
SCTG 41, WASTE AND SCRAP							
Total	S	S	S	S	S	S	19.5
Single modes	S	S	S	S	S	S	23.1
Truck	46.2	8.0	36.6	13.3	43.7	13.0	19.0
For-hire truck	49.9	8.8	42.3	11.2	47.9	10.2	22.0
Private truck	38.3	7.8	42.2	10.3	41.4	10.5	29.8
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	31.6
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	31.6
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	31.3
SCTG 43, MIXED FREIGHT							
Total	16.3	—	15.8	—	27.9	—	24.7
Single modes	16.4	2.7	16.7	2.9	17.5	9.6	38.2
Truck	16.4	2.7	16.7	3.0	17.9	9.9	34.1
For-hire truck	14.7	3.4	16.1	4.2	13.5	7.1	23.2
Private truck	20.6	4.9	22.1	5.5	26.5	6.6	31.1
Rail	S	S	S	S	S	S	31.6
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	24.5
Pipeline	—	—	—	—	S	S	S
Multiple modes	36.7	2.6	32.0	.6	38.1	2.5	10.5
Parcel, U.S. Postal Service or courier	36.8	2.6	33.2	.6	39.1	2.6	10.5
Truck and rail	S	S	S	S	S	S	29.9
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	18.7	.2	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	20.2	—	37.2	—	47.7	—	27.8
Single modes	26.7	11.9	39.1	6.5	48.9	3.4	47.0
Truck	33.3	12.1	27.6	13.3	S	S	S
For-hire truck	42.8	9.1	35.2	10.7	37.3	18.4	36.0
Private truck	47.6	9.8	31.9	7.0	S	S	S
Rail	S	S	S	S	S	S	28.1
Water	S	S	S	S	S	S	29.8
Shallow draft	S	S	S	S	S	S	29.8
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	40.6
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	28.2
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	28.2
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.

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

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

State of destination	Value		Tons		Ton-miles	
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage
Total	8.9	—	9.6	—	18.0	—
NEW ENGLAND STATES						
Connecticut	19.2	.1	21.0	—	20.9	—
Maine	24.3	—	S	S	S	S
Massachusetts	17.8	.1	30.4	.1	28.6	.3
New Hampshire	20.9	—	20.1	—	20.6	—
Rhode Island	S	S	40.0	—	41.9	—
Vermont	33.6	—	30.6	—	28.7	—
MIDDLE ATLANTIC STATES						
New Jersey	17.3	.4	23.5	.2	22.6	.4
New York	8.7	.4	10.7	.2	14.0	.4
Pennsylvania	12.4	.4	34.7	.9	47.4	1.3
EAST NORTH CENTRAL STATES						
Illinois	6.6	.3	9.2	.1	8.2	.2
Indiana	17.7	.5	16.9	.7	16.6	.3
Michigan	17.2	.9	8.8	.5	13.8	1.4
Ohio	8.2	1.8	6.6	2.9	13.0	1.8
Wisconsin	47.5	.9	32.2	.3	30.4	.6
WEST NORTH CENTRAL STATES						
Iowa	15.5	—	32.2	—	34.0	.3
Kansas	31.9	.2	28.0	—	27.6	.2
Minnesota	30.1	.3	16.8	—	17.2	.2
Missouri	14.8	.2	13.3	—	13.8	.2
Nebraska	18.3	—	20.6	—	20.2	—
North Dakota	39.3	—	41.7	—	41.9	—
South Dakota	25.5	—	30.7	—	30.8	—
SOUTH ATLANTIC STATES						
Delaware	48.3	.1	S	S	S	S
District of Columbia	17.7	—	29.0	—	26.4	—
Florida	12.5	.2	27.0	.2	33.0	1.1
Georgia	13.2	.3	23.0	.3	21.3	.7
Maryland	19.2	.2	22.2	.1	21.2	.2
North Carolina	24.5	.4	49.0	.7	S	S
South Carolina	S	S	34.1	.1	34.2	.3
Virginia	9.1	—	14.6	—	17.9	.2
West Virginia	15.2	.2	26.7	.3	17.8	.2
EAST SOUTH CENTRAL STATES						
Alabama	14.1	.1	18.7	—	18.1	.2
Kentucky	10.5	.4	45.8	1.0	S	S
Mississippi	16.8	—	17.8	—	17.4	—
Tennessee	7.4	.1	19.4	.2	14.5	.2
WEST SOUTH CENTRAL STATES						
Arkansas	11.9	—	23.1	—	25.6	.2
Louisiana	S	S	35.7	.4	36.7	1.8
Oklahoma	S	S	47.6	—	48.5	.3
Texas	17.6	.4	11.0	.2	11.6	1.3
MOUNTAIN STATES						
Arizona	19.3	—	23.6	—	23.6	.2
Colorado	31.1	.1	24.1	—	23.5	.2
Idaho	26.4	—	30.6	—	29.9	—
Montana	S	S	S	S	S	S
Nevada	22.5	—	40.7	—	39.9	.2
New Mexico	31.0	—	S	S	S	S
Utah	29.6	—	38.8	—	38.9	.1
Wyoming	44.4	—	S	S	S	S
PACIFIC STATES						
Alaska	33.4	—	29.3	—	28.1	—
California	16.6	.3	20.3	.1	21.0	1.1
Hawaii	29.9	—	S	S	S	S
Oregon	9.5	—	14.4	—	14.5	.1
Washington	20.7	.2	21.4	—	21.7	.4

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

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

Table B-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	4.5	—	5.0	—	6.0	—
NEW ENGLAND STATES						
Connecticut	20.0	—	20.2	—	20.1	—
Maine	14.2	—	18.9	—	17.3	—
Massachusetts	23.8	.2	32.4	—	31.5	—
New Hampshire	7.9	—	36.5	—	36.1	—
Rhode Island	43.2	—	S	S	S	S
Vermont	31.7	—	33.5	—	34.4	—
MIDDLE ATLANTIC STATES						
New Jersey	14.7	.3	18.8	.1	20.6	.2
New York	20.6	.7	26.4	.2	25.8	.4
Pennsylvania	7.3	.4	13.7	.5	13.7	.5
EAST NORTH CENTRAL STATES						
Illinois	13.7	.6	17.5	.6	19.5	.8
Indiana	11.3	.6	5.2	.3	6.0	.2
Michigan	5.3	.3	10.8	.7	18.5	.9
Ohio	8.2	1.9	6.6	2.0	13.0	1.9
Wisconsin	10.0	.2	28.8	.5	31.4	1.3
WEST NORTH CENTRAL STATES						
Iowa	11.7	—	S	S	S	S
Kansas	23.1	.2	16.6	—	17.1	—
Minnesota	18.6	.2	26.2	.8	27.9	2.6
Missouri	48.2	1.1	24.2	—	24.9	.2
Nebraska	25.3	—	21.1	—	22.2	—
North Dakota	23.1	—	34.6	—	34.1	—
South Dakota	34.4	—	30.0	—	26.7	—
SOUTH ATLANTIC STATES						
Delaware	48.2	.2	18.2	—	19.9	—
District of Columbia	S	S	S	S	S	S
Florida	12.1	.1	12.5	—	13.1	.3
Georgia	18.7	.4	12.6	—	11.9	.2
Maryland	21.6	—	32.5	.1	32.7	.2
North Carolina	10.5	.1	13.4	—	15.1	.1
South Carolina	20.5	.4	30.3	.1	29.9	.4
Virginia	8.5	.1	29.4	.3	27.0	.3
West Virginia	34.7	.5	23.6	1.2	20.8	1.3
EAST SOUTH CENTRAL STATES						
Alabama	17.2	.1	27.0	.1	27.7	.3
Kentucky	20.9	.7	35.0	1.6	41.7	1.7
Mississippi	30.8	.1	37.2	—	39.5	.3
Tennessee	8.6	.2	12.3	—	12.3	.1
WEST SOUTH CENTRAL STATES						
Arkansas	13.4	.1	20.9	.1	20.8	.3
Louisiana	20.5	.1	37.2	.3	44.3	1.8
Oklahoma	18.0	—	33.8	—	34.7	.2
Texas	12.7	.2	15.2	.1	21.3	1.2
MOUNTAIN STATES						
Arizona	34.0	.2	41.6	—	41.2	—
Colorado	14.4	—	S	S	S	S
Idaho	19.1	—	30.7	—	31.1	.2
Montana	23.6	—	37.3	—	37.1	—
Nevada	18.0	—	36.8	—	35.2	—
New Mexico	37.6	—	S	S	S	S
Utah	19.3	—	S	S	S	S
Wyoming	28.7	—	37.2	.6	37.1	3.1
PACIFIC STATES						
Alaska	S	S	S	S	S	S
California	12.5	.5	26.5	.1	26.7	1.0
Hawaii	S	S	S	S	S	S
Oregon	20.2	—	S	S	S	S
Washington	34.4	—	36.8	—	36.5	.2

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

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

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

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

Mode of transportation	Value			Tons			Ton-miles			Average miles per shipment		
	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change
	2002	1997		2002	1997		2002	1997		2002	1997	
Total	8.9	6.1	13.8	9.6	6.3	12.4	18.0	8.1	24.7	10.0	7.6	13.1
Single modes	10.3	5.1	15.1	10.3	6.2	13.1	18.3	9.0	25.3	14.3	5.5	17.2
Truck	8.5	5.9	13.2	6.4	6.3	8.8	9.3	3.2	11.5	15.4	6.9	20.1
Rail	43.2	13.8	83.3	44.1	20.4	71.9	38.1	23.6	54.9	13.4	20.8	37.0
Water	32.8	26.9	37.0	31.4	24.9	101.5	39.1	29.5	97.5	33.6	19.7	12.1
Air (includes truck and air)	11.8	12.1	14.5	28.8	13.2	19.8	29.3	14.6	32.7	5.7	5.8	9.2
Pipeline	21.2	21.8	49.2	23.3	15.7	45.5	S	S	S	S	S	S
Multiple modes	9.1	11.6	16.3	33.6	21.8	29.2	37.0	15.3	49.5	6.2	5.6	9.0
Parcel, U.S. Postal Service or courier ..	10.7	15.2	23.3	10.1	18.7	26.0	11.4	28.4	40.8	6.2	5.7	9.0
Truck and rail	32.1	21.1	20.1	38.8	11.6	33.9	42.5	10.3	47.9	10.8	7.9	16.3
All other multiple modes	43.5	31.3	10.6	S	31.7	S	S	37.6	S	S	S	S
Other and unknown modes ...	26.2	15.6	41.8	29.0	24.5	34.8	42.4	18.0	67.0	18.5	27.0	61.6

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

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

Table B–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	8.9	6.1	13.8	9.6	6.3	12.4	18.0	8.1	24.7	10.0	7.6	13.1
01-05	Agricultural products and fish	27.4	7.8	24.3	40.5	16.6	44.4	S	29.7	S	27.9	21.5	83.8
06-09	Grains, alcohol, and tobacco products	7.9	6.5	11.4	11.4	6.6	14.3	25.2	8.2	40.4	S	10.0	S
10-14	Stones, nonmetallic minerals, and metallic ores	45.9	14.9	64.8	15.2	13.8	19.2	21.4	22.7	20.5	16.3	25.0	24.9
15-19	Coal and petroleum products	13.3	8.8	20.4	13.4	12.1	17.5	26.3	13.4	45.5	S	22.4	S
20-24	Basic chemicals, chemical, and pharmaceutical products	7.0	6.0	10.8	23.4	29.2	44.6	20.9	20.1	42.2	8.0	11.0	14.7
25-30	Logs, wood products, and textile and leather	12.2	11.9	25.4	15.6	11.7	21.3	14.4	13.0	19.1	10.4	7.9	16.4
31-34	Base metal and machinery ..	7.3	6.6	9.5	14.3	6.9	16.4	21.4	5.6	20.1	6.7	15.9	13.1
35-38	Electronic, motorized vehicles, and precision instruments	23.5	15.2	45.4	25.8	9.0	54.6	30.7	10.0	67.5	20.5	6.7	18.4
39-43	Furniture, mixed freight and misc. manufactured prod. ..	8.6	9.5	21.0	39.9	9.5	84.9	22.8	11.4	41.1	12.1	7.0	14.9
--	Commodity unknown	20.2	27.6	12.1	37.2	34.3	13.1	47.7	17.1	118.4	27.8	19.1	29.9

– 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.

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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.

