# Missouri: 2002

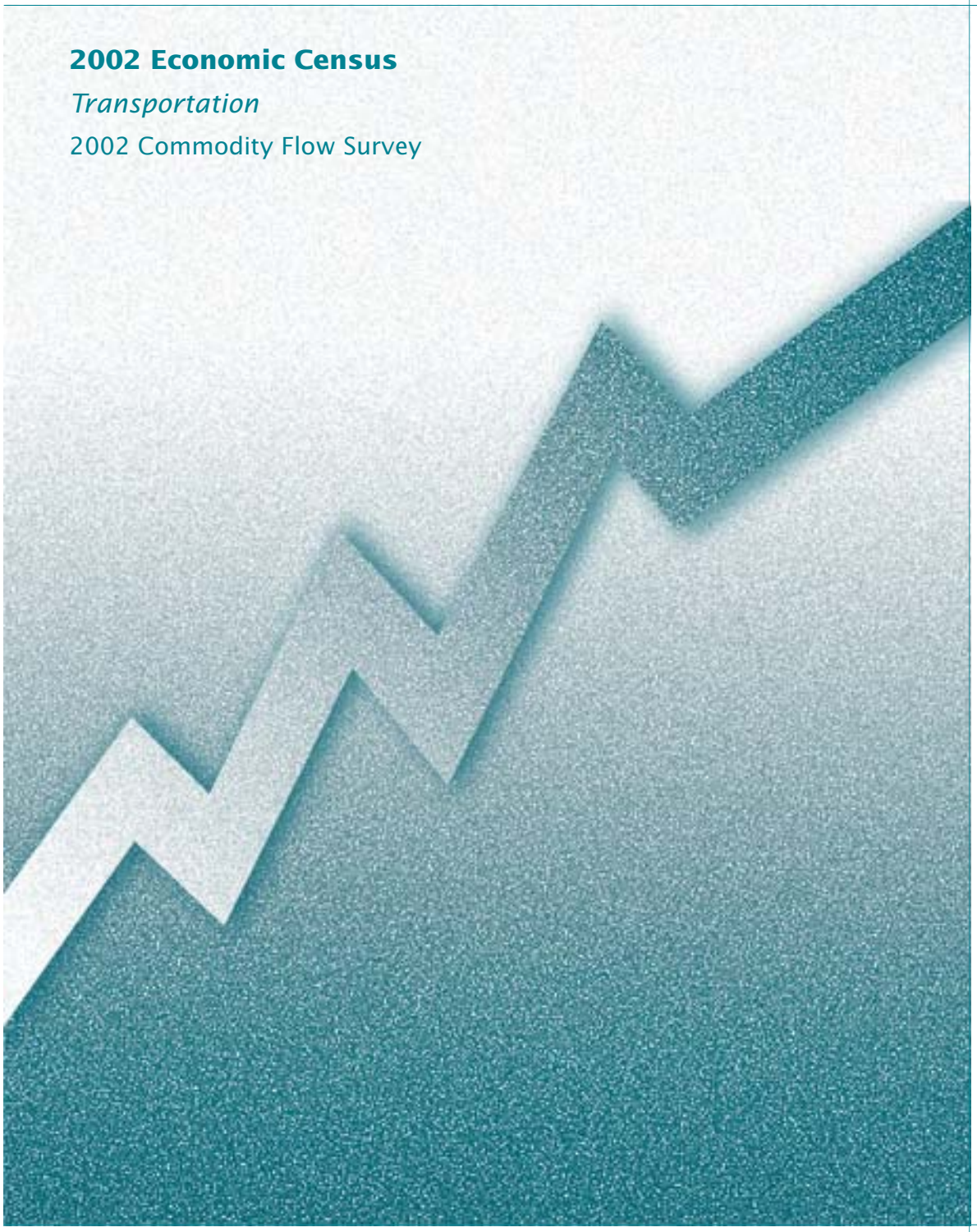
Issued December 2004

EC02TCF-MO

## 2002 Economic Census

*Transportation*

2002 Commodity Flow Survey



U.S. Department of Transportation
BUREAU OF TRANSPORTATION STATISTICS

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

# ACKNOWLEDGMENTS

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

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

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

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

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

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

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

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

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# Introduction to the Economic Census

## PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in "2" and "7".

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the federal government use the data to monitor economic activity and to assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

## BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

## AVAILABILITY OF ADDITIONAL DATA

All results of the 2002 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs and digital versatile discs (CD-ROMs and DVD-ROMs) for sale by the Census Bureau. The American FactFinder system at the Web site allows selective retrieval and downloading of the data. For more information, including a description of reports being issued, see the Web site, write to the U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-763-4636.

## HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some service trades in 1933.

Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated, providing comparable census data across economic sectors and using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census report forms.

The range of industries covered in the economic censuses expanded between 1967 and 2002. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity. New for 2002 is coverage of four industries classified in the Agriculture, Forestry, and Fishing sector under the SIC system: landscape agricultural services, landscaping services, veterinary services, and pet care services.

Printed statistical reports from the 1997 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. CD-ROMs issued from the 1987, 1992, and 1997 Economic Censuses contain databases including all or nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

## SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the Guide to the 2002 Economic Census at www.census.gov/epcd/ec02/guide.html. More information on the methodology, procedures, and history of the censuses will be published in the History of the 2002 Economic Census at www.census.gov/econ/www/history.html.

# 2002 Commodity Flow Survey

## GENERAL

The 2002 Commodity Flow Survey (CFS) is undertaken through a partnership between the U.S. Census Bureau, U.S. Department of Commerce, and the Bureau of Transportation Statistics (BTS), U.S. Department of Transportation. This survey produces data on the movement of goods in the United States. It provides information on commodities shipped, their value, weight, and mode of transportation, as well as the origin and destination of shipments of manufacturing, mining, wholesale, and select retail establishments. The data from the CFS are used by public policy analysts and for transportation planning and decision making to assess the demand for transportation facilities and services, energy use, and safety risk and environmental concerns. The CFS was last conducted in 1997.

This report contains background information on the 2002 Commodity Flow Survey and then presents detailed tabular results on shipment characteristics by mode of transportation, commodity, distance shipped, and shipment weight. In Appendix A, key characteristics of the 2002 CFS are compared to those of the 1993 and 1997 surveys. Appendix B focuses on the reliability of the estimates and discusses sampling and nonsampling errors. Tables containing estimates of sampling variability corresponding to each table on shipment characteristics are also included in Appendix B.

This report presents data at the state level. Additional reports will include data for the United States, census regions, divisions, and selected metropolitan areas, as well as selected data on exports and hazardous material shipments.

## INDUSTRY COVERAGE

The 2002 CFS covers business establishments with paid employees that are located in the United States and are classified using the 1997 North American Industry Classification System (NAICS) in mining, manufacturing, wholesale trade, and select retail trade industries, namely, electronic shopping and mail-order houses. Establishments classified in services, transportation, construction, and most retail industries are excluded from the survey. Farms, fisheries, foreign establishments, and most government-owned establishments are also excluded.

The survey also covers auxiliary establishments (i.e., warehouses and managing offices) of multi-establishment companies, which have nonauxiliary establishments that are in-scope to the CFS or are classified in retail trade. The coverage of managing offices has been expanded in the 2002 CFS, compared to the 1997 CFS. For the 1997 CFS, the number of in-scope managing offices was reduced to a large extent based on the results of the 1992 Economic Census. A managing office was considered in-scope to the 1997 CFS only if it had sales or end-of-year inventories in the 1992 Census. However, research conducted prior to the 2002 CFS showed that not all managing offices with shipping activity in the 1997 CFS indicated sales or inventories in the 1997 Economic Census. Therefore, the 1997 Economic Census results were not used in the determination of scope for managing offices in the 2002 CFS.

For the 1993 CFS and the 1997 CFS, establishments were classified based on the 1987 Standard Industrial Classification System (SIC). Though an attempt was made to maintain similar coverage between the 1997 CFS and the 2002 CFS, there were some changes in industry coverage due to the conversion from SIC to NAICS. Most notably, coverage of the logging industry changed from an in-scope Manufacturing SIC code (SIC 2411) to an out-of-scope Agriculture, Forestry, Fishing, and Hunting NAICS code (NAICS 1133). Also, coverage of the publishing industry changed from in-scope Manufacturing SIC codes (SIC 2711, 2721, 2731, 2741, and part of 2771) to out-of-scope Information NAICS codes (NAICS 5111 and 51223).

See Appendix A for a comparison between the 2002, 1997, and 1993 surveys. Also see Appendix C for a more detailed discussion on industry coverage and the sample design.

The NAICS industries covered in the 2002 CFS are listed in the following table:

| NAICS code | Description |
|---|---|
| 212 | Mining (Except Oil and Gas) |
| 311 | Food Manufacturing |
| 312 | Beverage and Tobacco Product Manufacturing |
| 313 | Textile Mills |
| 314 | Textile Product Mills |
| 315 | Apparel Manufacturing |
| 316 | Leather and Allied Product Manufacturing |
| 321 | Wood Product Manufacturing |
| 322 | Paper Manufacturing |
| 323 | Printing and Related Support Activities |
| 324 | Petroleum and Coal Products Manufacturing |
| 325 | Chemical Manufacturing |
| 326 | Plastics and Rubber Products Manufacturing |
| 327 | Nonmetallic Mineral Product Manufacturing |
| 331 | Primary Metal Manufacturing |
| 332 | Fabricated Metal Product Manufacturing |
| 333 | Machinery Manufacturing |
| 334 | Computer and Electronic Product Manufacturing |
| 335 | Electrical Equipment, Appliance, and Component Manufacturing |
| 336 | Transportation Equipment Manufacturing |
| 337 | Furniture and Related Product Manufacturing |
| 339 | Miscellaneous Manufacturing |
| 421 | Wholesale Trade, Durable Goods |
| 422 | Wholesale Trade, Nondurable Goods |
| 4541 | Electronic Shopping and Mail-Order Houses |
| 49310 | Warehousing and Storage |
| 551114 | Corporate, Subsidiary, and Regional Managing Offices |

## SHIPMENT COVERAGE

The CFS captures data on shipments originating from select types of business establishments located in the 50 states and the District of Columbia. The data do not cover shipments originating from business establishments located in Puerto Rico and other U.S. possessions and territories. Shipments traversing the U.S. from a foreign location to another foreign location (e.g., from Canada to Mexico) are not included, nor are shipments from a foreign location to a U.S. location. Imported products are included in the CFS at the point that they left the importer's domestic location for shipment to another location. Shipments that are shipped through a foreign territory with both the origin and destination in the U.S. are included in the CFS data. The mileages calculated for these shipments exclude the international segments (e.g., shipments from New York to Michigan through Canada do not include any mileages for Canada). Export shipments are included, with the domestic destination defined as the U.S. port, airport, or border crossing of exit from the U.S.

The "Industry Coverage" section of the text lists the NAICS groups covered by the CFS. Other industry areas that are not covered, but may have significant shipping activity, include agriculture and government. For agriculture, specifically, this means that the CFS does not cover shipments of agricultural products from the farm site to the processing centers or terminal elevators (most likely short-distance local movements), but does cover the shipments of these products from the initial processing centers or terminal elevators onward.

## MILEAGE CALCULATIONS

To estimate the distance traveled by each freight shipment sampled for the 2002 Commodity Flow Survey, the BTS Mileage Calculation Team used routing algorithms and an integrated, intermodal transportation network developed and updated expressly for this purpose by the Oak Ridge

National Laboratory (ORNL). The BTS Team worked at a secure data site within the Census Bureau. Each record contained the ZIP Code shipment origin and destination, and the mode or modal sequence required by the routing algorithm for distance estimation. Each record also contained information on type of commodity moved, its weight, dollar value, and hazardous materials status. For export shipments, data on the U.S. port of exit were also identified, along with foreign destination city and country. Processing of shipment records began in the fall of 2002, with completion in October 2003.

One essential exercise was editing and imputing both absent and invalid geographic data elements, specifically origin and destination ZIP Codes, prior to estimating the distance traveled for each freight shipment. For this purpose, the BTS Mileage Calculation Team developed and maintained databases of domestic city/state names and foreign city/country names. The missing data elements, along with other related data problems found by the BTS Team, were either: (1) imputed because of high probability of accurate correction by the BTS Team, such as imputing a missing destination ZIP Code, given a destination city and state; or (2) reported back to the Census Bureau, allowing for call-backs to shippers for clarification/correction.

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

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

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

### Mileage Data for Pipeline Shipments

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

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

## EXPLANATION OF TERMS

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

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

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

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

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

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

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

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

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

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

### Mode Definitions

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

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

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

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

   Private truck
   For-hire truck
   Rail
   Shallow draft vessel
   Deep draft vessel
   Pipeline

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

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

4. **Other multiple modes.** Shipments using any other mode combinations not specifically listed in the tables.

5. **Other and unknown modes.** Shipments for which modes were not reported, or were reported by the respondent as "Other" or "Unknown."

6. **Truck.** Shipments using for-hire truck only, private truck only, or a combination of for-hire truck and private truck.

7. **Water.** Shipments using shallow draft vessel only, deep draft vessel only, or Great Lakes vessel only. Combinations of these modes, such as shallow draft vessel and Great Lakes vessel are included as "Other multiple modes." (Note: By definition, "shallow draft," "Great Lakes," and "deep draft" are mutually exclusive.)

8. **Great Lakes.** In the tables in this publication, "Great Lakes" appears as a single mode. ORNL's transportation network and mileage calculation system allowed for separate mileage calculations for Great Lakes between the origin and destination ZIP Codes.

### Other Definitions and Terms

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

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

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

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

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

## ABBREVIATIONS AND SYMBOLS

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

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

## OTHER TRANSPORTATION DATA

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

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

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

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** | **185 392** | **100.0** | **254 827** | **100.0** | **72 910** | **100.0** | **517** |
| **Single modes** | **157 782** | **85.1** | **247 143** | **97.0** | **67 095** | **92.0** | **233** |
| Truck[2] | 134 904 | 72.8 | 189 434 | 74.3 | 36 478 | 50.0 | 187 |
| For-hire truck | 77 930 | 42.0 | 98 150 | 38.5 | 27 065 | 37.1 | 388 |
| Private truck | 56 727 | 30.6 | 86 588 | 34.0 | 9 141 | 12.5 | 100 |
| Rail | 19 652 | 10.6 | 31 118 | 12.2 | 18 270 | 25.1 | 674 |
| Water | 1 043 | .6 | S | S | 12 255 | 16.8 | S |
| Shallow draft | 1 043 | .6 | S | S | 12 255 | 16.8 | S |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | 2 170 | 1.2 | 65 | – | 92 | .1 | 1 347 |
| Pipeline[3] | S | S | S | S | S | S | S |
| **Multiple modes** | **23 421** | **12.6** | **5 143** | **2.0** | **4 717** | **6.5** | **833** |
| Parcel, U.S. Postal Service or courier | 21 588 | 11.6 | 1 042 | .4 | 822 | 1.1 | 832 |
| Truck and rail | 1 225 | .7 | 1 132 | .4 | 1 597 | 2.2 | 1 668 |
| Truck and water | S | S | S | S | S | S | 3 499 |
| Rail and water | 344 | .2 | S | S | S | S | 3 927 |
| Other multiple modes | S | S | S | S | S | S | S |
| **Other and unknown modes** | **4 190** | **2.3** | **2 541** | **1.0** | **1 099** | **1.5** | **246** |

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

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

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

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

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

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

| Mode of transportation | Value (percent) | | Tons (percent) | | Ton-miles[1] (percent) | |
|---|---|---|---|---|---|---|
| | 2002 | 1997 | 2002 | 1997 | 2002 | 1997 |
| **Total** | **100.0** | **100.0** | **100.0** | **100.0** | **100.0** | **100.0** |
| **Single modes** | **85.1** | **82.5** | **97.0** | **96.8** | **92.0** | **94.8** |
| Truck[2] | 72.8 | 67.4 | 74.3 | 78.6 | 50.0 | 46.8 |
| For-hire truck | 42.0 | 42.7 | 38.5 | 37.0 | 37.1 | 36.6 |
| Private truck | 30.6 | 24.6 | 34.0 | 40.5 | 12.5 | 10.0 |
| Rail | 10.6 | 12.4 | 12.2 | 7.6 | 25.1 | 20.8 |
| Water | .6 | .8 | S | 10.5 | 16.8 | 27.1 |
| Shallow draft | .6 | .8 | S | 10.5 | 16.8 | 27.1 |
| Great Lakes | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – |
| Air (includes truck and air) | 1.2 | 1.9 | – | – | .1 | .1 |
| Pipeline[3] | S | – | S | – | S | S |
| **Multiple modes** | **12.6** | **14.3** | **2.0** | **1.1** | **6.5** | **4.0** |
| Parcel, U.S. Postal Service or courier | 11.6 | 12.7 | .4 | .4 | 1.1 | 1.0 |
| Truck and rail | .7 | 1.5 | .4 | .7 | 2.2 | 2.9 |
| Truck and water | S | S | S | S | S | S |
| Rail and water | .2 | – | S | – | S | – |
| Other multiple modes | S | S | S | S | S | S |
| **Other and unknown modes** | **2.3** | **3.2** | **1.0** | **2.1** | **1.5** | **1.2** |

– 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.

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

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

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

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

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

| Mode of transportation[1] | Ton-miles[2] | | Average miles per shipment |
|---|---|---|---|
| | 2002 (millions) | Percent | |
| **Total** | **72 910** | **100.0** | **517** |
| Truck | 36 478 | 50.0 | 187 |
| Rail | 18 270 | 25.1 | 674 |
| Shallow draft | 12 255 | 16.8 | S |
| Great Lakes | – | – | – |
| Deep draft | – | – | – |
| Air | 92 | .1 | 1 347 |
| Parcel, U.S. Postal Service or courier | S | S | 5 |
| Pipeline[3] | S | S | S |
| Other and unknown modes | 1 099 | 1.5 | 246 |

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

[1]Estimates represent activity for a given mode across single and multiple mode shipments. For example, "Truck" ton-miles includes total ton-miles for shipments moving only by truck plus ton-miles for truck segments of multiple mode shipments.
[2]Ton-miles estimates are based on estimated distances traveled along a modeled transportation network. See "Mileage Calculations" section for additional information.
[3]Estimates exclude shipments of crude petroleum (SCTG 16).

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

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

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

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

| Mode of transportation and distance shipped[1] (based on Great Circle Distance) | Value | | Tons | | Ton-miles[2] | |
|---|---|---|---|---|---|---|
| | 2002 (million dollars) | Percent | 2002 (thousands) | Percent | 2002 (millions) | Percent |
| **Total** | **185 392** | **100.0** | **254 827** | **100.0** | **72 910** | **100.0** |
| Less than 50 miles | 43 575 | 23.5 | 107 320 | 42.1 | 2 147 | 2.9 |
| 50 to 99 miles | 10 509 | 5.7 | 20 343 | 8.0 | 1 920 | 2.6 |
| 100 to 249 miles | 34 134 | 18.4 | 52 463 | 20.6 | 12 491 | 17.1 |
| 250 to 499 miles | 33 359 | 18.0 | 38 946 | 15.3 | 19 611 | 26.9 |
| 500 to 749 miles | 31 807 | 17.2 | 23 571 | 9.2 | 20 191 | 27.7 |
| 750 to 999 miles | 14 045 | 7.6 | 6 553 | 2.6 | 7 155 | 9.8 |
| 1,000 to 1,499 miles | 11 876 | 6.4 | 3 881 | 1.5 | 5 675 | 7.8 |
| 1,500 to 1,999 miles | 5 441 | 2.9 | 1 691 | .7 | 3 423 | 4.7 |
| 2,000 miles or more | 648 | .3 | 61 | – | 296 | .4 |
| **Single modes** | **157 782** | **100.0** | **247 143** | **100.0** | **67 095** | **100.0** |
| Less than 50 miles | 40 172 | 25.5 | 106 053 | 42.9 | 2 133 | 3.2 |
| 50 to 99 miles | 9 527 | 6.0 | 20 132 | 8.1 | 1 900 | 2.8 |
| 100 to 249 miles | 30 576 | 19.4 | 50 141 | 20.3 | 11 658 | 17.4 |
| 250 to 499 miles | 27 629 | 17.5 | 38 440 | 15.6 | 19 373 | 28.9 |
| 500 to 749 miles | 27 295 | 17.3 | 21 823 | 8.8 | 18 217 | 27.2 |
| 750 to 999 miles | 10 156 | 6.4 | 6 062 | 2.5 | 6 600 | 9.8 |
| 1,000 to 1,499 miles | 8 708 | 5.5 | 3 314 | 1.3 | 4 852 | 7.2 |
| 1,500 to 1,999 miles | 3 711 | 2.4 | 1 177 | .5 | 2 360 | 3.5 |
| 2,000 miles or more | 8 | – | S | S | S | S |
| **Truck[3]** | **134 904** | **100.0** | **189 434** | **100.0** | **36 478** | **100.0** |
| Less than 50 miles | 39 861 | 29.5 | 93 009 | 49.1 | 1 614 | 4.4 |
| 50 to 99 miles | 9 481 | 7.0 | 19 763 | 10.4 | 1 837 | 5.0 |
| 100 to 249 miles | 29 190 | 21.6 | 37 947 | 20.0 | 7 772 | 21.3 |
| 250 to 499 miles | 25 733 | 19.1 | 23 322 | 12.3 | 10 504 | 28.8 |
| 500 to 749 miles | 13 586 | 10.1 | 8 542 | 4.5 | 6 104 | 16.7 |
| 750 to 999 miles | 7 907 | 5.9 | 3 670 | 1.9 | 3 697 | 10.1 |
| 1,000 to 1,499 miles | 6 659 | 4.9 | 2 326 | 1.2 | 3 275 | 9.0 |
| 1,500 to 1,999 miles | 2 484 | 1.8 | 854 | .5 | 1 674 | 4.6 |
| 2,000 miles or more | S | S | S | S | S | S |
| **For-hire truck** | **77 930** | **100.0** | **98 150** | **100.0** | **27 065** | **100.0** |
| Less than 50 miles | 10 567 | 13.6 | 36 374 | 37.1 | 637 | 2.4 |
| 50 to 99 miles | 4 012 | 5.1 | 5 878 | 6.0 | 579 | 2.1 |
| 100 to 249 miles | 17 124 | 22.0 | 25 511 | 26.0 | 5 348 | 19.8 |
| 250 to 499 miles | 20 098 | 25.8 | 17 884 | 18.2 | 8 281 | 30.6 |
| 500 to 749 miles | 11 027 | 14.2 | 6 582 | 6.7 | 4 681 | 17.3 |
| 750 to 999 miles | 6 870 | 8.8 | 3 128 | 3.2 | 3 153 | 11.7 |
| 1,000 to 1,499 miles | 5 977 | 7.7 | 2 019 | 2.1 | 2 869 | 10.6 |
| 1,500 to 1,999 miles | 2 250 | 2.9 | 774 | .8 | 1 516 | 5.6 |
| 2,000 miles or more | S | S | S | S | S | S |
| **Private truck** | **56 727** | **100.0** | **86 588** | **100.0** | **9 141** | **100.0** |
| Less than 50 miles | 29 225 | 51.5 | 53 045 | 61.3 | 939 | 10.3 |
| 50 to 99 miles | 5 468 | 9.6 | 13 884 | 16.0 | 1 258 | 13.8 |
| 100 to 249 miles | 12 018 | 21.2 | 11 580 | 13.4 | 2 299 | 25.2 |
| 250 to 499 miles | 5 541 | 9.8 | 5 224 | 6.0 | 2 154 | 23.6 |
| 500 to 749 miles | 2 546 | 4.5 | S | S | S | S |
| 750 to 999 miles | 1 035 | 1.8 | 541 | .6 | 543 | 5.9 |
| 1,000 to 1,499 miles | 672 | 1.2 | 280 | .3 | 373 | 4.1 |
| 1,500 to 1,999 miles | 223 | .4 | 78 | – | 155 | 1.7 |
| 2,000 miles or more | – | – | – | – | – | – |
| **Rail** | **19 652** | **100.0** | **31 118** | **100.0** | **18 270** | **100.0** |
| Less than 50 miles | S | S | S | S | S | S |
| 50 to 99 miles | S | S | 369 | 1.2 | S | S |
| 100 to 249 miles | 970 | 4.9 | 8 536 | 27.4 | 2 711 | 14.8 |
| 250 to 499 miles | 1 074 | 5.5 | 10 872 | 34.9 | 5 595 | 30.6 |
| 500 to 749 miles | S | S | 5 843 | 18.8 | 4 642 | 25.4 |
| 750 to 999 miles | 1 870 | 9.5 | 2 384 | 7.7 | 2 894 | 15.8 |
| 1,000 to 1,499 miles | 1 749 | 8.9 | 986 | 3.2 | 1 571 | 8.6 |
| 1,500 to 1,999 miles | 916 | 4.7 | 309 | 1.0 | 649 | 3.6 |
| 2,000 miles or more | – | – | – | – | – | – |
| **Water** | **1 043** | **100.0** | **S** | **S** | **12 255** | **100.0** |
| Less than 50 miles | S | S | S | S | S | S |
| 50 to 99 miles | – | – | – | – | – | – |
| 100 to 249 miles | 157 | 15.1 | 3 652 | 13.8 | 1 167 | 9.5 |
| 250 to 499 miles | S | S | 4 223 | 16.0 | 3 258 | 26.6 |
| 500 to 749 miles | 649 | 62.2 | 7 426 | 28.1 | 7 456 | 60.8 |
| 750 to 999 miles | – | – | – | – | – | – |
| 1,000 to 1,499 miles | – | – | – | – | – | – |
| 1,500 to 1,999 miles | – | – | – | – | – | – |
| 2,000 miles or more | – | – | – | – | – | – |
| **Shallow draft** | **1 043** | **100.0** | **S** | **S** | **12 255** | **100.0** |
| Less than 50 miles | S | S | S | S | S | S |
| 50 to 99 miles | – | – | – | – | – | – |
| 100 to 249 miles | 157 | 15.1 | 3 652 | 13.8 | 1 167 | 9.5 |
| 250 to 499 miles | S | S | 4 223 | 16.0 | 3 258 | 26.6 |
| 500 to 749 miles | 649 | 62.2 | 7 426 | 28.1 | 7 456 | 60.8 |
| 750 to 999 miles | – | – | – | – | – | – |
| 1,000 to 1,499 miles | – | – | – | – | – | – |
| 1,500 to 1,999 miles | – | – | – | – | – | – |
| 2,000 miles or more | – | – | – | – | – | – |

See footnotes at end of table.

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

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

| Mode of transportation and distance shipped[1] (based on Great Circle Distance) | Value | | Tons | | Ton-miles[2] | |
|---|---|---|---|---|---|---|
| | 2002 (million dollars) | Percent | 2002 (thousands) | Percent | 2002 (millions) | Percent |
| **Single modes**—Con. | | | | | | |
| **Great Lakes** | **–** | **–** | **–** | **–** | **–** | **–** |
| Less than 50 miles | – | – | – | – | – | – |
| 50 to 99 miles | – | – | – | – | – | – |
| 100 to 249 miles | – | – | – | – | – | – |
| 250 to 499 miles | – | – | – | – | – | – |
| 500 to 749 miles | – | – | – | – | – | – |
| 750 to 999 miles | – | – | – | – | – | – |
| 1,000 to 1,499 miles | – | – | – | – | – | – |
| 1,500 to 1,999 miles | – | – | – | – | – | – |
| 2,000 miles or more | – | – | – | – | – | – |
| **Deep draft** | **–** | **–** | **–** | **–** | **–** | **–** |
| Less than 50 miles | – | – | – | – | – | – |
| 50 to 99 miles | – | – | – | – | – | – |
| 100 to 249 miles | – | – | – | – | – | – |
| 250 to 499 miles | – | – | – | – | – | – |
| 500 to 749 miles | – | – | – | – | – | – |
| 750 to 999 miles | – | – | – | – | – | – |
| 1,000 to 1,499 miles | – | – | – | – | – | – |
| 1,500 to 1,999 miles | – | – | – | – | – | – |
| 2,000 miles or more | – | – | – | – | – | – |
| **Air (includes truck and air)** | **2 170** | **100.0** | **65** | **100.0** | **92** | **100.0** |
| Less than 50 miles | – | – | – | – | – | – |
| 50 to 99 miles | S | S | S | S | S | S |
| 100 to 249 miles | 259 | 11.9 | 5 | 7.4 | S | S |
| 250 to 499 miles | 609 | 28.1 | 22 | 34.6 | 17 | 18.2 |
| 500 to 749 miles | 307 | 14.1 | 12 | 18.4 | 15 | 16.2 |
| 750 to 999 miles | 379 | 17.5 | 8 | 11.7 | 9 | 9.6 |
| 1,000 to 1,499 miles | 300 | 13.8 | 3 | 4.8 | 6 | 6.2 |
| 1,500 to 1,999 miles | 311 | 14.3 | S | S | S | S |
| 2,000 miles or more | S | S | S | S | S | S |
| **Pipeline**[4] | **S** | **S** | **S** | **S** | **S** | **S** |
| Less than 50 miles | S | S | S | S | S | S |
| 50 to 99 miles | – | – | – | – | S | S |
| 100 to 249 miles | – | – | – | – | S | S |
| 250 to 499 miles | – | – | – | – | 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** | **23 421** | **100.0** | **5 143** | **100.0** | **4 717** | **100.0** |
| Less than 50 miles | 1 809 | 7.7 | 113 | 2.2 | 1 | – |
| 50 to 99 miles | 860 | 3.7 | 54 | 1.0 | 5 | .1 |
| 100 to 249 miles | 3 078 | 13.1 | S | S | S | S |
| 250 to 499 miles | 5 288 | 22.6 | 329 | 6.4 | 161 | 3.4 |
| 500 to 749 miles | 4 270 | 18.2 | S | S | S | S |
| 750 to 999 miles | 3 071 | 13.1 | 432 | 8.4 | 496 | 10.5 |
| 1,000 to 1,499 miles | 2 770 | 11.8 | 300 | 5.8 | 490 | 10.4 |
| 1,500 to 1,999 miles | 1 647 | 7.0 | S | S | S | S |
| 2,000 miles or more | 628 | 2.7 | 60 | 1.2 | 294 | 6.2 |
| **Parcel, U.S. Postal Service or courier** | **21 588** | **100.0** | **1 042** | **100.0** | **822** | **100.0** |
| Less than 50 miles | 1 733 | 8.0 | 84 | 8.1 | 1 | .2 |
| 50 to 99 miles | 850 | 3.9 | 31 | 2.9 | 3 | .4 |
| 100 to 249 miles | 3 016 | 14.0 | 106 | 10.1 | 22 | 2.6 |
| 250 to 499 miles | 5 284 | 24.5 | 259 | 24.8 | 118 | 14.3 |
| 500 to 749 miles | 4 029 | 18.7 | 192 | 18.4 | 144 | 17.5 |
| 750 to 999 miles | 2 789 | 12.9 | 162 | 15.5 | 165 | 20.1 |
| 1,000 to 1,499 miles | 2 633 | 12.2 | 123 | 11.8 | 171 | 20.9 |
| 1,500 to 1,999 miles | 1 145 | 5.3 | 73 | 7.0 | 140 | 17.0 |
| 2,000 miles or more | 108 | .5 | S | S | S | S |
| **Truck and rail** | **1 225** | **100.0** | **1 132** | **100.0** | **1 597** | **100.0** |
| Less than 50 miles | – | – | – | – | – | – |
| 50 to 99 miles | S | S | S | S | S | S |
| 100 to 249 miles | S | S | S | S | S | S |
| 250 to 499 miles | S | S | S | S | S | S |
| 500 to 749 miles | S | S | S | S | S | S |
| 750 to 999 miles | 250 | 20.4 | 174 | 15.4 | 216 | 13.5 |
| 1,000 to 1,499 miles | 137 | 11.2 | S | S | S | S |
| 1,500 to 1,999 miles | 501 | 40.9 | S | S | S | S |
| 2,000 miles or more | S | S | S | S | S | S |
| **Truck and water** | **S** | **S** | **S** | **S** | **S** | **S** |
| Less than 50 miles | – | – | – | – | – | – |
| 50 to 99 miles | – | – | – | – | – | – |
| 100 to 249 miles | – | – | – | – | – | – |
| 250 to 499 miles | – | – | – | – | – | – |
| 500 to 749 miles | S | S | S | S | S | S |
| 750 to 999 miles | S | S | S | S | S | S |
| 1,000 to 1,499 miles | S | S | S | S | S | S |
| 1,500 to 1,999 miles | – | – | – | – | – | – |
| 2,000 miles or more | S | S | S | S | S | S |

See footnotes at end of table.

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

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

| Mode of transportation and distance shipped[1] (based on Great Circle Distance) | Value | | Tons | | Ton-miles[2] | |
|---|---|---|---|---|---|---|
| | 2002 (million dollars) | Percent | 2002 (thousands) | Percent | 2002 (millions) | Percent |
| **Multiple modes**—Con. | | | | | | |
| **Rail and water** | **344** | **100.0** | **S** | **S** | **S** | **S** |
| Less than 50 miles | – | – | – | – | – | – |
| 50 to 99 miles | – | – | – | – | – | – |
| 100 to 249 miles | S | S | S | S | S | S |
| 250 to 499 miles | – | – | – | – | – | – |
| 500 to 749 miles | S | S | S | S | S | S |
| 750 to 999 miles | – | – | – | – | – | – |
| 1,000 to 1,499 miles | – | – | – | – | – | – |
| 1,500 to 1,999 miles | – | – | – | – | – | – |
| 2,000 miles or more | S | S | S | S | S | S |
| **Other multiple modes** | **S** | **S** | **S** | **S** | **S** | **S** |
| Less than 50 miles | S | S | S | S | S | S |
| 50 to 99 miles | – | – | – | – | – | – |
| 100 to 249 miles | – | – | – | – | – | – |
| 250 to 499 miles | – | – | – | – | – | – |
| 500 to 749 miles | S | S | S | S | S | S |
| 750 to 999 miles | S | S | S | S | S | S |
| 1,000 to 1,499 miles | – | – | – | – | – | – |
| 1,500 to 1,999 miles | – | – | – | – | – | – |
| 2,000 miles or more | – | – | – | – | – | – |
| **Other and unknown modes** | **4 190** | **100.0** | **2 541** | **100.0** | **1 099** | **100.0** |
| Less than 50 miles | 1 594 | 38.0 | S | S | S | S |
| 50 to 99 miles | S | S | 157 | 6.2 | 15 | 1.4 |
| 100 to 249 miles | 480 | 11.4 | 178 | 7.0 | 37 | 3.4 |
| 250 to 499 miles | 442 | 10.5 | S | S | S | S |
| 500 to 749 miles | 241 | 5.8 | S | S | S | S |
| 750 to 999 miles | S | S | 59 | 2.3 | 59 | 5.4 |
| 1,000 to 1,499 miles | S | S | S | S | S | S |
| 1,500 to 1,999 miles | S | S | S | S | S | S |
| 2,000 miles or more | S | S | S | S | S | S |

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

[1]Shipments are grouped into distance categories based on Great Circle Distance (GCD). GCD is the shortest distance between 2 points on the surface of a sphere over the surface of that sphere.
[2]Ton-miles estimates are based on estimated distances traveled along a modeled transportation network. See "Mileage Calculations" section for additional information.
[3]"Truck" as a single mode includes shipments that were made by only private truck, only for-hire truck, or a combination of private truck and for-hire truck.
[4]Estimates for pipeline exclude shipments of crude petroleum.

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

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** | **185 392** | **100.0** | **254 827** | **100.0** | **72 910** | **100.0** | **517** |
| Less than 50 lb | 20 750 | 11.2 | 594 | .2 | 327 | .4 | 583 |
| 50 to 99 lb | 9 425 | 5.1 | 636 | .2 | S | S | 733 |
| 100 to 499 lb | 18 743 | 10.1 | 1 767 | .7 | 451 | .6 | 271 |
| 500 to 749 lb | 5 027 | 2.7 | 912 | .4 | 166 | .2 | 179 |
| 750 to 999 lb | 2 946 | 1.6 | 806 | .3 | 113 | .2 | 141 |
| 1,000 to 9,999 lb | 30 958 | 16.7 | 11 600 | 4.6 | 2 399 | 3.3 | 200 |
| 10,000 to 49,999 lb | 85 676 | 46.2 | 114 484 | 44.9 | 29 670 | 40.7 | 253 |
| 50,000 to 99,999 lb | 6 951 | 3.7 | 57 114 | 22.4 | 6 991 | 9.6 | 125 |
| 100,000 lb or more | 4 916 | 2.7 | 66 914 | 26.3 | 32 357 | 44.4 | 436 |
| **Single modes** | **157 782** | **100.0** | **247 143** | **100.0** | **67 095** | **100.0** | **233** |
| Less than 50 lb | 8 068 | 5.1 | 228 | – | 53 | – | 270 |
| 50 to 99 lb | 4 895 | 3.1 | 234 | – | 51 | – | 229 |
| 100 to 499 lb | 13 927 | 8.8 | 1 461 | .6 | 295 | .4 | 205 |
| 500 to 749 lb | 4 680 | 3.0 | 861 | .3 | 146 | .2 | 167 |
| 750 to 999 lb | 2 449 | 1.6 | 769 | .3 | 97 | .1 | 127 |
| 1,000 to 9,999 lb | 29 257 | 18.5 | 11 296 | 4.6 | 2 244 | 3.3 | 192 |
| 10,000 to 49,999 lb | 82 856 | 52.5 | 112 850 | 45.7 | 27 669 | 41.2 | 237 |
| 50,000 to 99,999 lb | 6 920 | 4.4 | 56 890 | 23.0 | 6 960 | 10.4 | 125 |
| 100,000 lb or more | 4 729 | 3.0 | 62 552 | 25.3 | 29 580 | 44.1 | 442 |
| **Truck[2]** | **134 904** | **100.0** | **189 434** | **100.0** | **36 478** | **100.0** | **187** |
| Less than 50 lb | 7 154 | 5.3 | 216 | .1 | 36 | .1 | 181 |
| 50 to 99 lb | 4 672 | 3.5 | 228 | .1 | 43 | .1 | 202 |
| 100 to 499 lb | 13 340 | 9.9 | 1 449 | .8 | 283 | .8 | 197 |
| 500 to 749 lb | 4 566 | 3.4 | 859 | .5 | 141 | .4 | 162 |
| 750 to 999 lb | 2 385 | 1.8 | 768 | .4 | 95 | .3 | 124 |
| 1,000 to 9,999 lb | 28 456 | 21.1 | 11 265 | 5.9 | 2 188 | 6.0 | 190 |
| 10,000 to 49,999 lb | 67 627 | 50.1 | 111 125 | 58.7 | 26 000 | 71.3 | 227 |
| 50,000 to 99,999 lb | 6 000 | 4.4 | 56 496 | 29.8 | 6 658 | 18.3 | 121 |
| 100,000 lb or more | 704 | .5 | 7 028 | 3.7 | 1 034 | 2.8 | S |
| **For-hire truck** | **77 930** | **100.0** | **98 150** | **100.0** | **27 065** | **100.0** | **388** |
| Less than 50 lb | 4 491 | 5.8 | 62 | – | 18 | – | 331 |
| 50 to 99 lb | 2 882 | 3.7 | 57 | – | 30 | .1 | 560 |
| 100 to 499 lb | 7 521 | 9.7 | 378 | .4 | 196 | .7 | 515 |
| 500 to 749 lb | 2 176 | 2.8 | 246 | .3 | 98 | .4 | 401 |
| 750 to 999 lb | 987 | 1.3 | 130 | .1 | 53 | .2 | 401 |
| 1,000 to 9,999 lb | 15 441 | 19.8 | 2 885 | 2.9 | 1 496 | 5.5 | 505 |
| 10,000 to 49,999 lb | 41 057 | 52.7 | 57 324 | 58.4 | 19 227 | 71.0 | 344 |
| 50,000 to 99,999 lb | 3 075 | 3.9 | 33 333 | 34.0 | 5 217 | 19.3 | 159 |
| 100,000 lb or more | 301 | .4 | 3 734 | 3.8 | S | S | 188 |
| **Private truck** | **56 727** | **100.0** | **86 588** | **100.0** | **9 141** | **100.0** | **100** |
| Less than 50 lb | 2 645 | 4.7 | 151 | .2 | 17 | .2 | 120 |
| 50 to 99 lb | 1 787 | 3.1 | 171 | .2 | 14 | .1 | 80 |
| 100 to 499 lb | 5 807 | 10.2 | 1 068 | 1.2 | 87 | .9 | 84 |
| 500 to 749 lb | 2 357 | 4.2 | 572 | .7 | 42 | .5 | 73 |
| 750 to 999 lb | 1 396 | 2.5 | 637 | .7 | 41 | .5 | 66 |
| 1,000 to 9,999 lb | 12 968 | 22.9 | 8 338 | 9.6 | 680 | 7.4 | 85 |
| 10,000 to 49,999 lb | 26 488 | 46.7 | 50 966 | 58.9 | 6 595 | 72.2 | 119 |
| 50,000 to 99,999 lb | 2 877 | 5.1 | 21 390 | 24.7 | 1 361 | 14.9 | 65 |
| 100,000 lb or more | 403 | .7 | 3 293 | 3.8 | 305 | 3.3 | S |
| **Rail** | **19 652** | **100.0** | **31 118** | **100.0** | **18 270** | **100.0** | **674** |
| Less than 50 lb | S | S | S | S | S | S | 310 |
| 50 to 99 lb | – | – | – | – | – | – | – |
| 100 to 499 lb | S | S | S | S | S | S | 1 253 |
| 500 to 749 lb | – | – | – | – | – | – | – |
| 750 to 999 lb | – | – | – | – | – | – | – |
| 1,000 to 9,999 lb | S | S | S | S | S | S | 1 504 |
| 10,000 to 49,999 lb | S | S | 1 718 | 5.5 | 1 658 | 9.1 | 982 |
| 50,000 to 99,999 lb | S | S | S | S | 236 | 1.3 | 800 |
| 100,000 lb or more | 3 050 | 15.5 | 29 077 | 93.4 | 16 352 | 89.5 | 538 |
| **Water** | **1 043** | **100.0** | **S** | **S** | **12 255** | **100.0** | **S** |
| 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 | S | S | S | S | S | S | 782 |
| 100,000 lb or more | 962 | 92.2 | S | S | 12 193 | 99.5 | S |
| **Shallow draft** | **1 043** | **100.0** | **S** | **S** | **12 255** | **100.0** | **S** |
| 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 | S | S | S | S | S | S | 782 |
| 100,000 lb or more | 962 | 92.2 | S | S | 12 193 | 99.5 | S |

See footnotes at end of table.

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

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

| Mode of transportation and shipment weight | Value | | Tons | | Ton-miles[1] | | Average miles per shipment |
|---|---|---|---|---|---|---|---|
| | 2002 (million dollars) | Percent | 2002 (thousands) | Percent | 2002 (millions) | Percent | |
| **Single modes**—Con. | | | | | | | |
| **Great Lakes** | **–** | **–** | **–** | **–** | **–** | **–** | **–** |
| Less than 50 lb | – | – | – | – | – | – | – |
| 50 to 99 lb | – | – | – | – | – | – | – |
| 100 to 499 lb | – | – | – | – | – | – | – |
| 500 to 749 lb | – | – | – | – | – | – | – |
| 750 to 999 lb | – | – | – | – | – | – | – |
| 1,000 to 9,999 lb | – | – | – | – | – | – | – |
| 10,000 to 49,999 lb | – | – | – | – | – | – | – |
| 50,000 to 99,999 lb | – | – | – | – | – | – | – |
| 100,000 lb or more | – | – | – | – | – | – | – |
| **Deep draft** | **–** | **–** | **–** | **–** | **–** | **–** | **–** |
| 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 | – | – | – | – | – | – | – |
| **Air (includes truck and air)** | **2 170** | **100.0** | **65** | **100.0** | **92** | **100.0** | **1 347** |
| Less than 50 lb | 914 | 42.1 | S | S | S | S | 1 364 |
| 50 to 99 lb | 223 | 10.3 | S | S | S | S | 1 302 |
| 100 to 499 lb | 566 | 26.1 | 12 | 17.8 | 11 | 12.6 | 1 038 |
| 500 to 749 lb | S | S | S | S | S | S | 1 657 |
| 750 to 999 lb | S | S | S | S | S | S | 1 129 |
| 1,000 to 9,999 lb | 281 | 12.9 | S | S | S | S | 1 467 |
| 10,000 to 49,999 lb | S | S | S | S | S | S | 1 380 |
| 50,000 to 99,999 lb | S | S | S | S | S | S | 799 |
| 100,000 lb or more | – | – | – | – | – | – | – |
| **Pipeline**[3] | **S** | **S** | **S** | **S** | **S** | **S** | **S** |
| Less than 50 lb | – | – | – | – | S | S | S |
| 50 to 99 lb | – | – | – | – | S | S | S |
| 100 to 499 lb | – | – | – | – | 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 |
| 10,000 to 49,999 lb | – | – | – | – | S | S | S |
| 50,000 to 99,999 lb | – | – | – | – | S | S | S |
| 100,000 lb or more | S | S | S | S | S | S | S |
| **Multiple modes** | **23 421** | **100.0** | **5 143** | **100.0** | **4 717** | **100.0** | **833** |
| Less than 50 lb | 12 035 | 51.4 | 343 | 6.7 | 268 | 5.7 | 802 |
| 50 to 99 lb | 4 385 | 18.7 | S | S | S | S | 1 012 |
| 100 to 499 lb | 4 388 | 18.7 | 251 | 4.9 | 148 | 3.1 | 594 |
| 500 to 749 lb | 317 | 1.4 | 39 | .8 | 19 | .4 | 502 |
| 750 to 999 lb | S | S | S | S | S | S | 477 |
| 1,000 to 9,999 lb | S | S | S | S | S | S | 1 312 |
| 10,000 to 49,999 lb | 1 559 | 6.7 | 837 | 16.3 | 1 544 | 32.7 | 1 904 |
| 50,000 to 99,999 lb | S | S | S | S | S | S | 1 647 |
| 100,000 lb or more | S | S | S | S | S | S | 861 |
| **Parcel, U.S. Postal Service or courier** | **21 588** | **100.0** | **1 042** | **100.0** | **822** | **100.0** | **832** |
| Less than 50 lb | 12 022 | 55.7 | 342 | 32.9 | 268 | 32.5 | 802 |
| 50 to 99 lb | 4 383 | 20.3 | S | S | S | S | 1 012 |
| 100 to 499 lb | 4 385 | 20.3 | 249 | 23.9 | 147 | 17.9 | 595 |
| 500 to 749 lb | 316 | 1.5 | 37 | 3.5 | 19 | 2.3 | 539 |
| 750 to 999 lb | S | S | S | S | S | S | 462 |
| 1,000 to 9,999 lb | S | S | S | S | S | S | 762 |
| 10,000 to 49,999 lb | – | – | – | – | – | – | – |
| 50,000 to 99,999 lb | – | – | – | – | – | – | – |
| 100,000 lb or more | – | – | – | – | – | – | – |
| **Truck and rail** | **1 225** | **100.0** | **1 132** | **100.0** | **1 597** | **100.0** | **1 668** |
| Less than 50 lb | S | S | S | S | S | S | 1 105 |
| 50 to 99 lb | S | S | S | S | S | S | 1 105 |
| 100 to 499 lb | S | S | S | S | S | S | 1 368 |
| 500 to 749 lb | – | – | – | – | – | – | – |
| 750 to 999 lb | S | S | S | S | S | S | 4 716 |
| 1,000 to 9,999 lb | S | S | S | S | S | S | 1 354 |
| 10,000 to 49,999 lb | 983 | 80.2 | 770 | 68.0 | 1 340 | 83.9 | 1 760 |
| 50,000 to 99,999 lb | S | S | S | S | S | S | 1 890 |
| 100,000 lb or more | S | S | S | S | S | S | 853 |
| **Truck and water** | **S** | **S** | **S** | **S** | **S** | **S** | **3 499** |
| Less than 50 lb | S | S | S | S | S | S | 4 423 |
| 50 to 99 lb | S | S | S | S | S | S | 764 |
| 100 to 499 lb | S | S | S | S | S | S | 2 554 |
| 500 to 749 lb | – | – | – | – | – | – | – |
| 750 to 999 lb | S | S | S | S | S | S | 4 335 |
| 1,000 to 9,999 lb | – | – | – | – | – | – | – |
| 10,000 to 49,999 lb | S | S | S | S | S | S | 5 257 |
| 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** | **344** | **100.0** | **S** | **S** | **S** | **S** | **3 927** |
| Less than 50 lb | – | – | – | – | – | – | – |
| 50 to 99 lb | – | – | – | – | – | – | – |
| 100 to 499 lb | – | – | – | – | – | – | – |
| 500 to 749 lb | – | – | – | – | – | – | – |
| 750 to 999 lb | – | – | – | – | – | – | – |
| 1,000 to 9,999 lb | – | – | – | – | – | – | – |
| 10,000 to 49,999 lb | S | S | S | S | S | S | 4 114 |
| 50,000 to 99,999 lb | – | – | – | – | – | – | – |
| 100,000 lb or more | S | S | S | S | S | S | 802 |
| **Other multiple modes** | **S** | **S** | **S** | **S** | **S** | **S** | **S** |
| Less than 50 lb | S | S | S | S | S | S | 6 |
| 50 to 99 lb | S | S | S | S | S | S | 1 |
| 100 to 499 lb | S | S | S | S | S | S | 7 |
| 500 to 749 lb | S | S | S | S | S | S | 7 |
| 750 to 999 lb | – | – | – | – | – | – | – |
| 1,000 to 9,999 lb | – | – | – | – | – | – | – |
| 10,000 to 49,999 lb | S | S | S | S | S | S | 15 |
| 50,000 to 99,999 lb | S | S | S | S | S | S | 7 |
| 100,000 lb or more | S | S | S | S | S | S | 1 217 |
| **Other and unknown modes** | **4 190** | **100.0** | **2 541** | **100.0** | **1 099** | **100.0** | **246** |
| Less than 50 lb | 647 | 15.4 | 23 | .9 | S | S | 213 |
| 50 to 99 lb | 146 | 3.5 | 20 | .8 | S | S | 539 |
| 100 to 499 lb | 428 | 10.2 | 55 | 2.2 | 8 | .7 | 134 |
| 500 to 749 lb | 30 | .7 | 11 | .4 | 1 | – | S |
| 750 to 999 lb | 34 | .8 | 5 | .2 | S | S | 180 |
| 1,000 to 9,999 lb | 1 536 | 36.7 | 285 | 11.2 | S | S | 492 |
| 10,000 to 49,999 lb | 1 261 | 30.1 | 797 | 31.3 | S | S | 680 |
| 50,000 to 99,999 lb | S | S | 217 | 8.5 | 21 | 1.9 | 95 |
| 100,000 lb or more | S | S | S | S | S | S | S |

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

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

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

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

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

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

| SCTG code | Commodity description | Value | | Tons | | Ton-miles[1] | | Average miles per shipment |
|---|---|---|---|---|---|---|---|---|
| | | 2002 (million dollars) | Percent | 2002 (thousands) | Percent | 2002 (millions) | Percent | |
| | **Total[2]** | **185 392** | **100.0** | **254 827** | **100.0** | **72 910** | **100.0** | **517** |
| 01 | Live animals and live fish | S | S | S | S | S | S | S |
| 02 | Cereal grains | 2 150 | 1.2 | 22 548 | 8.8 | 11 867 | 16.3 | 251 |
| 03 | Other agricultural products | 3 087 | 1.7 | 12 442 | 4.9 | 3 080 | 4.2 | S |
| 04 | Animal feed and products of animal origin, n.e.c. | 1 839 | 1.0 | S | S | S | S | S |
| 05 | Meat, fish, seafood, and their preparations | S | S | S | S | S | S | 271 |
| 06 | Milled grain products and preparations, and bakery products | S | S | 7 172 | 2.8 | 4 075 | 5.6 | 215 |
| 07 | Other prepared foodstuffs and fats and oils | 8 545 | 4.6 | 12 232 | 4.8 | 4 823 | 6.6 | S |
| 08 | Alcoholic beverages | 2 556 | 1.4 | 3 069 | 1.2 | S | S | 43 |
| 09 | Tobacco products | S | S | S | S | S | S | 174 |
| 10 | Monumental or building stone | – | – | – | – | – | – | – |
| 11 | Natural sands | 83 | – | S | S | S | S | 44 |
| 12 | Gravel and crushed stone | 376 | .2 | 67 143 | 26.3 | 12 929 | 17.7 | 41 |
| 13 | Nonmetallic minerals n.e.c. | S | S | S | S | S | S | S |
| 14 | Metallic ores and concentrates | 95 | – | 352 | .1 | 55 | – | 118 |
| 15 | Coal | – | – | – | – | – | – | – |
| 17 | Gasoline and aviation turbine fuel | 1 867 | 1.0 | 6 380 | 2.5 | 254 | .3 | 30 |
| 18 | Fuel oils | 1 090 | .6 | 4 283 | 1.7 | 139 | .2 | 29 |
| 19 | Coal and petroleum products, n.e.c. | 677 | .4 | S | S | 161 | .2 | S |
| 20 | Basic chemicals | 2 570 | 1.4 | S | S | S | S | 875 |
| 21 | Pharmaceutical products | 16 315 | 8.8 | 433 | .2 | 203 | .3 | 318 |
| 22 | Fertilizers | 302 | .2 | S | S | 208 | .3 | S |
| 23 | Chemical products and preparations, n.e.c. | 5 898 | 3.2 | 5 762 | 2.3 | 2 372 | 3.3 | S |
| 24 | Plastics and rubber | 5 284 | 2.9 | 1 550 | .6 | 511 | .7 | 296 |
| 25 | Logs and other wood in the rough | 70 | – | 200 | – | S | S | 557 |
| 26 | Wood products | 1 908 | 1.0 | 4 239 | 1.7 | 957 | 1.3 | 248 |
| 27 | Pulp, newsprint, paper, and paperboard | 525 | .3 | S | S | S | S | 118 |
| 28 | Paper or paperboard articles | 2 881 | 1.6 | 1 394 | .5 | 712 | 1.0 | 495 |
| 29 | Printed products | 7 196 | 3.9 | 850 | .3 | 707 | 1.0 | 1 008 |
| 30 | Textiles, leather, and articles of textiles or leather | 5 236 | 2.8 | 399 | .2 | 317 | .4 | 816 |
| 31 | Nonmetallic mineral products | 3 087 | 1.7 | 12 472 | 4.9 | 3 544 | 4.9 | 355 |
| 32 | Base metal in primary or semifinished forms and in finished basic shapes | 4 079 | 2.2 | 3 145 | 1.2 | 973 | 1.3 | 208 |
| 33 | Articles of base metal | 6 885 | 3.7 | 4 948 | 1.9 | 1 641 | 2.3 | 218 |
| 34 | Machinery | 9 994 | 5.4 | 1 934 | .8 | 1 097 | 1.5 | 527 |
| 35 | Electronic and other electrical equipment and components and office equipment | 11 422 | 6.2 | 986 | .4 | 596 | .8 | 472 |
| 36 | Motorized and other vehicles (including parts) | 23 940 | 12.9 | 3 119 | 1.2 | 1 975 | 2.7 | 506 |
| 37 | Transportation equipment, n.e.c. | S | S | S | S | S | S | 665 |
| 38 | Precision instruments and apparatus | 931 | .5 | S | S | 23 | – | 519 |
| 39 | Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs | 2 596 | 1.4 | 762 | .3 | 431 | .6 | 652 |
| 40 | Miscellaneous manufactured products | 16 177 | 8.7 | 2 888 | 1.1 | 1 522 | 2.1 | 766 |
| 41 | Waste and scrap | 2 888 | 1.6 | 13 342 | 5.2 | 5 168 | 7.1 | 393 |
| 43 | Mixed freight | 18 213 | 9.8 | 5 930 | 2.3 | 1 778 | 2.4 | 350 |
| -- | Commodity unknown | 280 | .2 | 177 | – | 65 | – | 809 |

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

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

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

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

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

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

| SCTG code | Commodity description | Value (percent) | | Tons (percent) | | Ton-miles[1] (percent) | |
|---|---|---|---|---|---|---|---|
| | | 2002 | 1997 | 2002 | 1997 | 2002 | 1997 |
| | **Total[2]** | **100.0** | **100.0** | **100.0** | **100.0** | **100.0** | **100.0** |
| 01 | Live animals and live fish | S | S | S | S | S | S |
| 02 | Cereal grains | 1.2 | 1.3 | 8.8 | 7.2 | 16.3 | 15.7 |
| 03 | Other agricultural products | 1.7 | 1.5 | 4.9 | 3.2 | 4.2 | 4.5 |
| 04 | Animal feed and products of animal origin, n.e.c | 1.0 | 2.1 | S | 5.8 | S | 4.3 |
| 05 | Meat, fish, seafood, and their preparations | S | 2.2 | S | .9 | S | 1.6 |
| 06 | Milled grain products and preparations, and bakery products | S | 2.3 | 2.8 | 3.0 | 5.6 | 7.3 |
| 07 | Other prepared foodstuffs and fats and oils | 4.6 | 6.2 | 4.8 | 4.3 | 6.6 | 4.3 |
| 08 | Alcoholic beverages | 1.4 | 2.1 | 1.2 | 2.0 | S | 2.2 |
| 09 | Tobacco products | S | .4 | S | – | S | – |
| 10 | Monumental or building stone | – | S | – | S | – | S |
| 11 | Natural sands | – | – | S | 1.3 | S | .5 |
| 12 | Gravel and crushed stone | .2 | .2 | 26.3 | 31.9 | 17.7 | 17.9 |
| 13 | Nonmetallic minerals n.e.c. | S | S | S | S | S | .1 |
| 14 | Metallic ores and concentrates | – | .2 | .1 | 1.1 | – | .4 |
| 15 | Coal | – | – | – | S | – | – |
| 17 | Gasoline and aviation turbine fuel | 1.0 | 1.2 | 2.5 | 3.0 | .3 | .5 |
| 18 | Fuel oils | .6 | .6 | 1.7 | 2.1 | .2 | .3 |
| 19 | Coal and petroleum products, n.e.c. | .4 | .7 | S | S | .2 | S |
| 20 | Basic chemicals | 1.4 | 1.1 | S | 1.7 | S | S |
| 21 | Pharmaceutical products | 8.8 | 5.7 | .2 | .2 | .3 | S |
| 22 | Fertilizers | .2 | .4 | S | 1.3 | .3 | 1.0 |
| 23 | Chemical products and preparations, n.e.c. | 3.2 | 4.9 | 2.3 | 2.7 | 3.3 | 3.8 |
| 24 | Plastics and rubber | 2.9 | 2.9 | .6 | .9 | .7 | S |
| 25 | Logs and other wood in the rough | – | – | – | – | S | S |
| 26 | Wood products | 1.0 | 1.1 | 1.7 | 1.4 | 1.3 | 1.0 |
| 27 | Pulp, newsprint, paper, and paperboard | .3 | .5 | S | .3 | S | .2 |
| 28 | Paper or paperboard articles | 1.6 | 1.8 | .5 | .8 | 1.0 | 1.0 |
| 29 | Printed products | 3.9 | 4.6 | .3 | 1.0 | 1.0 | 2.3 |
| 30 | Textiles, leather, and articles of textiles or leather | 2.8 | 2.4 | .2 | .2 | .4 | .2 |
| 31 | Nonmetallic mineral products | 1.7 | 1.5 | 4.9 | 9.9 | 4.9 | 3.5 |
| 32 | Base metal in primary or semifinished forms and in finished basic shapes | 2.2 | 3.0 | 1.2 | 2.1 | 1.3 | 4.0 |
| 33 | Articles of base metal | 3.7 | 3.2 | 1.9 | 1.2 | 2.3 | 1.8 |
| 34 | Machinery | 5.4 | 4.9 | .8 | .5 | 1.5 | .9 |
| 35 | Electronic and other electrical equipment and components and office equipment | 6.2 | 7.6 | .4 | .6 | .8 | 1.5 |
| 36 | Motorized and other vehicles (including parts) | 12.9 | 17.9 | 1.2 | 2.3 | 2.7 | 6.6 |
| 37 | Transportation equipment, n.e.c. | S | 1.5 | S | – | S | .1 |
| 38 | Precision instruments and apparatus | .5 | 1.0 | S | – | – | S |
| 39 | Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs | 1.4 | 1.6 | .3 | .5 | .6 | 1.0 |
| 40 | Miscellaneous manufactured products | 8.7 | 8.1 | 1.1 | .9 | 2.1 | 1.8 |
| 41 | Waste and scrap | 1.6 | .6 | 5.2 | 2.0 | 7.1 | 2.4 |
| 43 | Mixed freight | 9.8 | 1.7 | 2.3 | .6 | 2.4 | .4 |
| -- | Commodity unknown | .2 | .8 | – | .2 | – | .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.

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

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

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

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

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

| SCTG code, description, and mode of transportation | Value | | Tons | | Ton-miles[1] | | Average miles per shipment |
|---|---|---|---|---|---|---|---|
| | 2002 (million dollars) | Percent | 2002 (thousands) | Percent | 2002 (millions) | Percent | |
| **ALL COMMODITIES** | | | | | | | |
| **Total[2]** | **185 392** | **100.0** | **254 827** | **100.0** | **72 910** | **100.0** | **517** |
| **Single modes** | **157 782** | **85.1** | **247 143** | **97.0** | **67 095** | **92.0** | **233** |
| Truck[3] | 134 904 | 72.8 | 189 434 | 74.3 | 36 478 | 50.0 | 187 |
| For-hire truck | 77 930 | 42.0 | 98 150 | 38.5 | 27 065 | 37.1 | 388 |
| Private truck | 56 727 | 30.6 | 86 588 | 34.0 | 9 141 | 12.5 | 100 |
| Rail | 19 652 | 10.6 | 31 118 | 12.2 | 18 270 | 25.1 | 674 |
| Water | 1 043 | .6 | S | S | 12 255 | 16.8 | S |
| Shallow draft | 1 043 | .6 | S | S | 12 255 | 16.8 | S |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | 2 170 | 1.2 | 65 | – | 92 | .1 | 1 347 |
| Pipeline[4] | S | S | S | S | S | S | S |
| **Multiple modes** | **23 421** | **12.6** | **5 143** | **2.0** | **4 717** | **6.5** | **833** |
| Parcel, U.S. Postal Service or courier | 21 588 | 11.6 | 1 042 | .4 | 822 | 1.1 | 832 |
| Truck and rail | 1 225 | .7 | 1 132 | .4 | 1 597 | 2.2 | 1 668 |
| Truck and water | S | S | S | S | S | S | 3 499 |
| Rail and water | 344 | .2 | S | S | S | S | 3 927 |
| Other multiple modes | S | S | S | S | S | S | S |
| **Other and unknown modes** | **4 190** | **2.3** | **2 541** | **1.0** | **1 099** | **1.5** | **246** |
| **SCTG 01, LIVE ANIMALS AND LIVE FISH** | | | | | | | |
| **Total** | **S** | **S** | **S** | **S** | **S** | **S** | **S** |
| **Single modes** | **S** | **S** | **S** | **S** | **S** | **S** | **S** |
| Truck[3] | S | S | S | S | S | S | S |
| For-hire truck | S | S | S | S | S | S | 477 |
| Private truck | S | S | S | S | S | S | 123 |
| 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** | **2 150** | **100.0** | **22 548** | **100.0** | **11 867** | **100.0** | **251** |
| **Single modes** | **2 107** | **98.0** | **22 102** | **98.0** | **11 410** | **96.2** | **253** |
| Truck[3] | 980 | 45.6 | 10 318 | 45.8 | S | S | 212 |
| For-hire truck | 885 | 41.2 | S | S | S | S | 308 |
| Private truck | S | S | S | S | S | S | 33 |
| Rail | 756 | 35.2 | 7 473 | 33.1 | 4 382 | 36.9 | 664 |
| Water | 370 | 17.2 | 4 311 | 19.1 | 4 066 | 34.3 | 902 |
| Shallow draft | 370 | 17.2 | 4 311 | 19.1 | 4 066 | 34.3 | 902 |
| 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 03, OTHER AGRICULTURAL PRODUCTS** | | | | | | | |
| **Total** | **3 087** | **100.0** | **12 442** | **100.0** | **3 080** | **100.0** | **S** |
| **Single modes** | **3 072** | **99.5** | **12 424** | **99.9** | **3 080** | **100.0** | **S** |
| Truck[3] | 2 235 | 72.4 | S | S | 426 | 13.8 | S |
| For-hire truck | 953 | 30.9 | 3 365 | 27.0 | 301 | 9.8 | 250 |
| Private truck | S | S | S | S | S | S | S |
| Rail | S | S | S | S | S | S | 435 |
| Water | S | S | S | S | S | S | 887 |
| Shallow draft | S | S | S | S | S | S | 887 |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | S | S | S | S | S | S | 714 |
| Pipeline[4] | – | – | – | – | S | S | S |
| **Multiple modes** | **S** | **S** | **S** | **S** | **S** | **S** | **7** |
| Parcel, U.S. Postal Service or courier | – | – | – | – | – | – | – |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | S | S | S | S | S | S | 7 |
| **Other and unknown modes** | **–** | **–** | **–** | **–** | **–** | **–** | **–** |
| **SCTG 04, ANIMAL FEED AND PRODUCTS OF ANIMAL ORIGIN, N.E.C.** | | | | | | | |
| **Total** | **1 839** | **100.0** | **S** | **S** | **S** | **S** | **S** |
| **Single modes** | **1 804** | **98.1** | **S** | **S** | **S** | **S** | **S** |
| Truck[3] | 1 674 | 91.0 | S | S | S | S | S |
| For-hire truck | 736 | 40.0 | S | S | S | S | S |
| Private truck | S | S | S | S | S | S | S |
| Rail | 129 | 7.0 | 790 | 5.5 | S | S | 689 |
| 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 | 70 |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | S | S | S | S | S | S | 7 |
| **Other and unknown modes** | **S** | **S** | **104** | **.7** | **S** | **S** | **123** |
| **SCTG 05, MEAT, FISH, SEAFOOD, AND THEIR PREPARATIONS** | | | | | | | |
| **Total** | **S** | **S** | **S** | **S** | **S** | **S** | **271** |
| **Single modes** | **S** | **S** | **S** | **S** | **S** | **S** | **271** |
| Truck[3] | S | S | S | S | S | S | 271 |
| For-hire truck | S | S | S | S | S | S | 671 |
| Private truck | S | S | S | S | S | S | S |
| Rail | – | – | – | – | – | – | – |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | – | – | – | – | – | – | – |
| Pipeline[4] | – | – | – | – | S | S | S |
| **Multiple modes** | **S** | **S** | **S** | **S** | **S** | **S** | **618** |
| Parcel, U.S. Postal Service or courier | S | S | S | S | S | S | 618 |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **138** |

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** | **S** | **S** | **7 172** | **100.0** | **4 075** | **100.0** | **215** |
| **Single modes** | **S** | **S** | **7 151** | **99.7** | **4 060** | **99.6** | **217** |
| Truck[3] | S | S | 5 938 | 82.8 | 2 788 | 68.4 | 202 |
| For-hire truck | S | S | 3 948 | 55.1 | 2 183 | 53.6 | 561 |
| Private truck | 3 389 | 39.0 | 1 990 | 27.7 | 604 | 14.8 | S |
| Rail | S | S | S | S | S | S | 1 154 |
| Water | S | S | S | S | S | S | 788 |
| Shallow draft | S | S | S | S | S | S | 788 |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | S | S | S | S | S | S | 1 544 |
| Pipeline[4] | – | – | – | – | S | S | S |
| **Multiple modes** | **S** | **S** | **S** | **S** | **S** | **S** | **148** |
| Parcel, U.S. Postal Service or courier | S | S | S | S | S | S | 148 |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **S** |
| **SCTG 07, OTHER PREPARED FOODSTUFFS AND FATS AND OILS** | | | | | | | |
| **Total** | **8 545** | **100.0** | **12 232** | **100.0** | **4 823** | **100.0** | **S** |
| **Single modes** | **8 278** | **96.9** | **11 790** | **96.4** | **4 566** | **94.7** | **S** |
| Truck[3] | 7 801 | 91.3 | 10 117 | 82.7 | 3 616 | 75.0 | S |
| For-hire truck | 4 211 | 49.3 | 4 589 | 37.5 | 2 403 | 49.8 | 633 |
| Private truck | 3 590 | 42.0 | S | S | S | S | S |
| Rail | 472 | 5.5 | 1 671 | 13.7 | 948 | 19.7 | 699 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | S | S | S | S | S | S | 1 125 |
| Pipeline[4] | – | – | – | – | S | S | S |
| **Multiple modes** | **S** | **S** | **S** | **S** | **S** | **S** | **623** |
| Parcel, U.S. Postal Service or courier | S | S | 6 | – | 4 | – | 621 |
| Truck and rail | S | S | S | S | S | S | 853 |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **S** |
| **SCTG 08, ALCOHOLIC BEVERAGES** | | | | | | | |
| **Total** | **2 556** | **100.0** | **3 069** | **100.0** | **S** | **S** | **43** |
| **Single modes** | **2 556** | **100.0** | **3 069** | **100.0** | **S** | **S** | **43** |
| Truck[3] | 2 399 | 93.9 | 2 834 | 92.3 | S | S | 42 |
| For-hire truck | S | S | S | S | S | S | 190 |
| Private truck | S | S | S | S | S | S | 21 |
| Rail | S | S | S | S | S | S | 555 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | – | – | – | – | – | – | – |
| Pipeline[4] | – | – | – | – | S | S | S |
| **Multiple modes** | **–** | **–** | **–** | **–** | **–** | **–** | **–** |
| Parcel, U.S. Postal Service or courier | – | – | – | – | – | – | – |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **–** | **–** | **–** | **–** | **–** | **–** | **–** |

See footnotes at end of table.

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

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

| SCTG code, description, and mode of transportation | Value | | Tons | | Ton-miles[1] | | Average miles per shipment |
|---|---|---|---|---|---|---|---|
| | 2002 (million dollars) | Percent | 2002 (thousands) | Percent | 2002 (millions) | Percent | |
| **SCTG 09, TOBACCO PRODUCTS** | | | | | | | |
| **Total** | **S** | **S** | **S** | **S** | **S** | **S** | **174** |
| **Single modes** | **S** | **S** | **S** | **S** | **S** | **S** | **174** |
| Truck[3] | S | S | S | S | S | S | 174 |
| For-hire truck | – | – | – | – | – | – | – |
| Private truck | S | S | S | S | S | S | 174 |
| Rail | – | – | – | – | – | – | – |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | – | – | – | – | – | – | – |
| Pipeline[4] | – | – | – | – | S | S | S |
| **Multiple modes** | **–** | **–** | **–** | **–** | **–** | **–** | **–** |
| Parcel, U.S. Postal Service or courier | – | – | – | – | – | – | – |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **–** | **–** | **–** | **–** | **–** | **–** | **–** |
| **SCTG 10, MONUMENTAL OR BUILDING STONE** | | | | | | | |
| **Total** | **–** | **–** | **–** | **–** | **–** | **–** | **–** |
| **Single modes** | **–** | **–** | **–** | **–** | **–** | **–** | **–** |
| Truck[3] | – | – | – | – | – | – | – |
| For-hire truck | – | – | – | – | – | – | – |
| Private truck | – | – | – | – | – | – | – |
| Rail | – | – | – | – | – | – | – |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | – | – | – | – | – | – | – |
| Pipeline[4] | – | – | – | – | S | S | S |
| **Multiple modes** | **–** | **–** | **–** | **–** | **–** | **–** | **–** |
| Parcel, U.S. Postal Service or courier | – | – | – | – | – | – | – |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **–** | **–** | **–** | **–** | **–** | **–** | **–** |
| **SCTG 11, NATURAL SANDS** | | | | | | | |
| **Total** | **83** | **100.0** | **S** | **S** | **S** | **S** | **44** |
| **Single modes** | **83** | **99.6** | **S** | **S** | **S** | **S** | **44** |
| Truck[3] | S | S | S | S | S | S | S |
| For-hire truck | S | S | S | S | S | S | S |
| Private truck | S | S | S | S | S | S | 15 |
| Rail | 3 | 3.8 | 215 | 1.0 | S | S | 650 |
| Water | S | S | S | S | S | S | 34 |
| Shallow draft | S | S | S | S | S | S | 34 |
| 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** | **32** |

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** | **376** | **100.0** | **67 143** | **100.0** | **12 929** | **100.0** | **41** |
| **Single modes** | **363** | **96.5** | **64 214** | **95.6** | **10 824** | **83.7** | **40** |
| Truck[3] | 287 | 76.5 | 52 468 | 78.1 | 2 084 | 16.1 | 38 |
| For-hire truck | 109 | 29.1 | 19 829 | 29.5 | 491 | 3.8 | 23 |
| Private truck | 159 | 42.2 | 29 208 | 43.5 | 1 463 | 11.3 | 47 |
| Rail | 48 | 12.8 | 5 012 | 7.5 | 3 976 | 30.8 | 680 |
| Water | 27 | 7.2 | 6 733 | 10.0 | 4 764 | 36.8 | 625 |
| Shallow draft | 27 | 7.2 | 6 733 | 10.0 | 4 764 | 36.8 | 625 |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | – | – | – | – | – | – | – |
| Pipeline[4] | – | – | – | – | S | S | S |
| **Multiple modes** | **S** | **S** | **S** | **S** | **S** | **S** | **891** |
| Parcel, U.S. Postal Service or courier | – | – | – | – | – | – | – |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | S | S | S | S | S | S | 802 |
| Other multiple modes | S | S | S | S | S | S | 1 016 |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **442** |
| **SCTG 13, NONMETALLIC MINERALS N.E.C.** | | | | | | | |
| **Total** | **S** | **S** | **S** | **S** | **S** | **S** | **S** |
| **Single modes** | **S** | **S** | **S** | **S** | **S** | **S** | **S** |
| Truck[3] | S | S | S | S | S | S | S |
| For-hire truck | S | S | S | S | S | S | 640 |
| Private truck | S | S | S | S | S | S | 46 |
| Rail | S | S | S | S | S | S | 749 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | – | – | – | – | – | – | – |
| Pipeline[4] | – | – | – | – | S | S | S |
| **Multiple modes** | **1** | **3.5** | **–** | **–** | **–** | **.6** | **627** |
| Parcel, U.S. Postal Service or courier | 1 | 3.5 | – | – | – | .6 | 627 |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **S** |
| **SCTG 14, METALLIC ORES AND CONCENTRATES** | | | | | | | |
| **Total** | **95** | **100.0** | **352** | **100.0** | **55** | **100.0** | **118** |
| **Single modes** | **94** | **98.5** | **352** | **100.0** | **55** | **100.0** | **191** |
| Truck[3] | 91 | 96.1 | 338 | 96.0 | 45 | 81.0 | 180 |
| For-hire truck | 54 | 57.2 | 314 | 89.1 | 34 | 60.6 | S |
| Private truck | S | S | S | S | S | S | 537 |
| Rail | S | S | S | S | S | S | 719 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | S | S | S | S | S | S | 799 |
| Pipeline[4] | – | – | – | – | S | S | S |
| **Multiple modes** | **S** | **S** | **S** | **S** | **S** | **S** | **62** |
| Parcel, U.S. Postal Service or courier | S | S | S | S | S | S | 62 |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **–** | **–** | **–** | **–** | **–** | **–** | **–** |

See footnotes at end of table.

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

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

| SCTG code, description, and mode of transportation | Value | | Tons | | Ton-miles[1] | | Average miles per shipment |
|---|---|---|---|---|---|---|---|
| | 2002 (million dollars) | Percent | 2002 (thousands) | Percent | 2002 (millions) | Percent | |
| **SCTG 15, COAL** | | | | | | | |
| **Total** | – | – | – | – | – | – | – |
| **Single modes** | – | – | – | – | – | – | – |
| Truck[3] | – | – | – | – | – | – | – |
| For-hire truck | – | – | – | – | – | – | – |
| Private truck | – | – | – | – | – | – | – |
| Rail | – | – | – | – | – | – | – |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | – | – | – | – | – | – | – |
| Pipeline[4] | – | – | – | – | S | S | S |
| **Multiple modes** | – | – | – | – | – | – | – |
| Parcel, U.S. Postal Service or courier | – | – | – | – | – | – | – |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | – | – | – | – | – | – | – |
| **SCTG 17, GASOLINE AND AVIATION TURBINE FUEL** | | | | | | | |
| **Total** | **1 867** | **100.0** | **6 380** | **100.0** | **254** | **100.0** | **30** |
| **Single modes** | **1 867** | **100.0** | **6 380** | **100.0** | **254** | **100.0** | **30** |
| Truck[3] | 1 867 | 100.0 | 6 380 | 100.0 | 254 | 100.0 | 30 |
| For-hire truck | 555 | 29.7 | 1 896 | 29.7 | 38 | 15.0 | 15 |
| Private truck | 1 265 | 67.7 | 4 331 | 67.9 | 144 | 56.6 | 26 |
| 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 18, FUEL OILS** | | | | | | | |
| **Total** | **1 090** | **100.0** | **4 283** | **100.0** | **139** | **100.0** | **29** |
| **Single modes** | **1 089** | **100.0** | **4 282** | **100.0** | **138** | **100.0** | **29** |
| Truck[3] | 1 076 | 98.8 | 4 221 | 98.5 | 138 | 99.8 | 29 |
| For-hire truck | 164 | 15.1 | 719 | 16.8 | 10 | 7.2 | 12 |
| Private truck | 894 | 82.0 | 3 436 | 80.2 | S | S | 27 |
| Rail | – | – | – | – | – | – | – |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | – | – | – | – | – | – | – |
| Pipeline[4] | S | S | S | S | S | S | S |
| **Multiple modes** | – | – | – | – | – | – | – |
| Parcel, U.S. Postal Service or courier | – | – | – | – | – | – | – |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **18** |

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** | **677** | **100.0** | **S** | **S** | **161** | **100.0** | **S** |
| **Single modes** | **676** | **99.9** | **S** | **S** | **161** | **100.0** | **S** |
| Truck[3] | 605 | 89.3 | S | S | 108 | 67.1 | S |
| For-hire truck | 230 | 34.0 | S | S | 65 | 40.4 | S |
| Private truck | S | S | S | S | S | S | S |
| Rail | 72 | 10.6 | 61 | 5.5 | S | S | 867 |
| 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** | **255** |
| Parcel, U.S. Postal Service or courier | S | S | S | S | S | S | 255 |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **18** |
| **SCTG 20, BASIC CHEMICALS** | | | | | | | |
| **Total** | **2 570** | **100.0** | **S** | **S** | **S** | **S** | **875** |
| **Single modes** | **2 434** | **94.7** | **S** | **S** | **S** | **S** | **857** |
| Truck[3] | 2 082 | 81.0 | 7 801 | 88.6 | S | S | 221 |
| For-hire truck | 1 552 | 60.4 | S | S | S | S | 344 |
| Private truck | 530 | 20.6 | S | S | S | S | 59 |
| Rail | S | S | S | S | S | S | 729 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | S | S | 6 | – | 10 | .3 | 1 271 |
| Pipeline[4] | – | – | – | – | S | S | S |
| **Multiple modes** | **S** | **S** | **S** | **S** | **S** | **S** | **922** |
| Parcel, U.S. Postal Service or courier | S | S | S | S | S | S | 922 |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **481** |
| **SCTG 21, PHARMACEUTICAL PRODUCTS** | | | | | | | |
| **Total** | **16 315** | **100.0** | **433** | **100.0** | **203** | **100.0** | **318** |
| **Single modes** | **13 989** | **85.7** | **409** | **94.5** | **191** | **94.1** | **232** |
| Truck[3] | 13 342 | 81.8 | 403 | 93.0 | 185 | 91.0 | 195 |
| For-hire truck | 12 395 | 76.0 | 338 | 78.0 | 174 | 85.5 | 205 |
| Private truck | 944 | 5.8 | 65 | 14.9 | S | S | 37 |
| Rail | – | – | – | – | – | – | – |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | 647 | 4.0 | S | S | S | S | 1 184 |
| Pipeline[4] | – | – | – | – | S | S | S |
| **Multiple modes** | **2 276** | **14.0** | **18** | **4.0** | **10** | **4.8** | **784** |
| Parcel, U.S. Postal Service or courier | 2 263 | 13.9 | 17 | 4.0 | 10 | 4.7 | 774 |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | S | S | S | S | S | S | 4 423 |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **50** | **.3** | **6** | **1.5** | **2** | **1.1** | **347** |

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** | **302** | **100.0** | **S** | **S** | **208** | **100.0** | **S** |
| **Single modes** | **298** | **98.7** | **S** | **S** | **208** | **100.0** | **S** |
| Truck[3] | S | S | S | S | 124 | 59.5 | S |
| For-hire truck | S | S | S | S | 105 | 50.4 | 112 |
| Private truck | S | S | S | S | S | S | S |
| Rail | 17 | 5.5 | S | S | S | S | 536 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | S | S | S | S | S | S | 774 |
| Pipeline[4] | – | – | – | – | S | S | S |
| **Multiple modes** | **S** | **S** | **S** | **S** | **S** | **S** | **54** |
| Parcel, U.S. Postal Service or courier | S | S | S | S | S | S | 54 |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **–** | **–** | **–** | **–** | **–** | **–** | **–** |
| **SCTG 23, CHEMICAL PRODUCTS AND PREPARATIONS, N.E.C.** | | | | | | | |
| **Total** | **5 898** | **100.0** | **5 762** | **100.0** | **2 372** | **100.0** | **S** |
| **Single modes** | **5 182** | **87.9** | **5 552** | **96.4** | **2 138** | **90.1** | **S** |
| Truck[3] | 4 843 | 82.1 | 5 325 | 92.4 | 1 832 | 77.2 | 143 |
| For-hire truck | 3 273 | 55.5 | 3 970 | 68.9 | 1 608 | 67.8 | 336 |
| Private truck | 1 570 | 26.6 | 1 355 | 23.5 | 224 | 9.5 | 47 |
| Rail | 328 | 5.6 | 227 | 3.9 | 305 | 12.9 | 1 352 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | S | S | S | S | S | S | 2 377 |
| Pipeline[4] | – | – | – | – | S | S | S |
| **Multiple modes** | **S** | **S** | **S** | **S** | **S** | **S** | **S** |
| Parcel, U.S. Postal Service or courier | S | S | S | S | S | S | S |
| Truck and rail | S | S | S | S | S | S | 1 200 |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **S** |
| **SCTG 24, PLASTICS AND RUBBER** | | | | | | | |
| **Total** | **5 284** | **100.0** | **1 550** | **100.0** | **511** | **100.0** | **296** |
| **Single modes** | **4 712** | **89.2** | **1 504** | **97.1** | **488** | **95.5** | **203** |
| Truck[3] | 4 708 | 89.1 | 1 504 | 97.0 | 488 | 95.4 | 199 |
| For-hire truck | 1 945 | 36.8 | 570 | 36.8 | 299 | 58.5 | 520 |
| Private truck | S | S | 933 | 60.2 | S | S | 126 |
| Rail | – | – | – | – | – | – | – |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | 4 | – | – | – | – | – | 1 659 |
| Pipeline[4] | – | – | – | – | S | S | S |
| **Multiple modes** | **423** | **8.0** | **22** | **1.4** | **15** | **2.9** | **698** |
| Parcel, U.S. Postal Service or courier | 421 | 8.0 | 22 | 1.4 | 15 | 2.9 | 699 |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | S | S | S | S | S | S | 835 |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | S | S | S | S | S | S | 7 |
| **Other and unknown modes** | **149** | **2.8** | **23** | **1.5** | **8** | **1.5** | **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** | **70** | **100.0** | **200** | **100.0** | **S** | **S** | **557** |
| **Single modes** | **39** | **55.4** | **133** | **66.8** | **S** | **S** | **248** |
| Truck[3] | 38 | 54.1 | 128 | 64.2 | S | S | 243 |
| For-hire truck | 33 | 47.7 | 117 | 58.6 | 31 | 18.3 | 231 |
| Private truck | 4 | 6.3 | 11 | 5.6 | S | S | 253 |
| Rail | S | S | S | S | S | S | 1 681 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | – | – | – | – | – | – | – |
| Pipeline[4] | – | – | – | – | S | S | S |
| **Multiple modes** | **S** | **S** | **S** | **S** | **S** | **S** | **2 141** |
| Parcel, U.S. Postal Service or courier | – | – | – | – | – | – | – |
| Truck and rail | S | S | S | S | S | S | 2 141 |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **249** |
| **SCTG 26, WOOD PRODUCTS** | | | | | | | |
| **Total** | **1 908** | **100.0** | **4 239** | **100.0** | **957** | **100.0** | **248** |
| **Single modes** | **1 720** | **90.2** | **3 490** | **82.3** | **913** | **95.4** | **120** |
| Truck[3] | 1 584 | 83.0 | 3 033 | 71.6 | 532 | 55.6 | 114 |
| For-hire truck | 610 | 32.0 | S | S | S | S | 354 |
| Private truck | 974 | 51.1 | 1 609 | 38.0 | 102 | 10.7 | 76 |
| Rail | S | S | S | S | S | S | 827 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | – | – | – | – | – | – | – |
| Pipeline[4] | – | – | – | – | S | S | S |
| **Multiple modes** | **S** | **S** | **28** | **.7** | **S** | **S** | **820** |
| Parcel, U.S. Postal Service or courier | S | S | S | S | S | S | 826 |
| Truck and rail | S | S | S | S | S | S | 1 289 |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | S | S | S | S | S | S | 1 |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **S** |
| **SCTG 27, PULP, NEWSPRINT, PAPER, AND PAPERBOARD** | | | | | | | |
| **Total** | **525** | **100.0** | **S** | **S** | **S** | **S** | **118** |
| **Single modes** | **514** | **97.9** | **S** | **S** | **S** | **S** | **103** |
| Truck[3] | 514 | 97.9 | S | S | S | S | 103 |
| For-hire truck | S | S | S | S | S | S | 699 |
| Private truck | 296 | 56.3 | S | S | S | S | S |
| Rail | – | – | – | – | – | – | – |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | – | – | – | – | – | – | – |
| Pipeline[4] | – | – | – | – | S | S | S |
| **Multiple modes** | **S** | **S** | **S** | **S** | **S** | **S** | **507** |
| Parcel, U.S. Postal Service or courier | S | S | S | S | S | S | 507 |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **28** |

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** | **2 881** | **100.0** | **1 394** | **100.0** | **712** | **100.0** | **495** |
| **Single modes** | **2 563** | **89.0** | **1 325** | **95.1** | **570** | **80.2** | **S** |
| Truck[3] | 2 559 | 88.8 | 1 321 | 94.8 | 563 | 79.1 | S |
| For-hire truck | 2 101 | 72.9 | 1 032 | 74.0 | 521 | 73.2 | 436 |
| Private truck | 445 | 15.4 | 267 | 19.2 | 39 | 5.5 | S |
| Rail | S | S | S | S | S | S | 1 635 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | S | S | S | S | S | S | 775 |
| Pipeline[4] | – | – | – | – | S | S | S |
| **Multiple modes** | **286** | **9.9** | **S** | **S** | **S** | **S** | **900** |
| Parcel, U.S. Postal Service or courier | 99 | 3.4 | 11 | .8 | 9 | 1.2 | 896 |
| Truck and rail | S | S | S | S | S | S | 2 698 |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **S** |
| **SCTG 29, PRINTED PRODUCTS** | | | | | | | |
| **Total** | **7 196** | **100.0** | **850** | **100.0** | **707** | **100.0** | **1 008** |
| **Single modes** | **2 185** | **30.4** | **326** | **38.3** | **262** | **37.1** | **796** |
| Truck[3] | 2 061 | 28.6 | 310 | 36.5 | 230 | 32.5 | 746 |
| For-hire truck | 1 835 | 25.5 | 290 | 34.1 | 228 | 32.2 | 1 068 |
| Private truck | S | S | 20 | 2.3 | S | S | 312 |
| Rail | S | S | S | S | S | S | 715 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | S | S | S | S | S | S | 1 461 |
| Pipeline[4] | – | – | – | – | S | S | S |
| **Multiple modes** | **4 759** | **66.1** | **S** | **S** | **S** | **S** | **1 020** |
| Parcel, U.S. Postal Service or courier | 4 759 | 66.1 | S | S | S | S | 1 020 |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | S | S | S | S | S | S | 1 361 |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **252** | **3.5** | **S** | **S** | **S** | **S** | **S** |
| **SCTG 30, TEXTILES, LEATHER, AND ARTICLES OF TEXTILES OR LEATHER** | | | | | | | |
| **Total** | **5 236** | **100.0** | **399** | **100.0** | **317** | **100.0** | **816** |
| **Single modes** | **2 859** | **54.6** | **274** | **68.9** | **225** | **71.1** | **591** |
| Truck[3] | 2 844 | 54.3 | 274 | 68.7 | 225 | 70.8 | 555 |
| For-hire truck | 2 514 | 48.0 | 221 | 55.4 | 204 | 64.2 | 688 |
| Private truck | 330 | 6.3 | S | S | S | S | S |
| Rail | – | – | – | – | – | – | – |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | 16 | .3 | – | .1 | 1 | .2 | 1 374 |
| Pipeline[4] | – | – | – | – | S | S | S |
| **Multiple modes** | **2 304** | **44.0** | **120** | **30.1** | **87** | **27.4** | **835** |
| Parcel, U.S. Postal Service or courier | 2 304 | 44.0 | 120 | 30.1 | 87 | 27.4 | 835 |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **72** | **1.4** | **4** | **1.1** | **S** | **S** | **743** |

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** | **3 087** | **100.0** | **12 472** | **100.0** | **3 544** | **100.0** | **355** |
| **Single modes** | **2 988** | **96.8** | **12 311** | **98.7** | **3 522** | **99.4** | **207** |
| Truck[3] | 2 765 | 89.6 | 8 871 | 71.1 | 1 906 | 53.8 | 204 |
| For-hire truck | 1 537 | 49.8 | 3 961 | 31.8 | 1 381 | 39.0 | 336 |
| Private truck | 1 228 | 39.8 | 4 910 | 39.4 | S | S | 113 |
| Rail | 68 | 2.2 | 1 276 | 10.2 | 620 | 17.5 | 499 |
| Water | 154 | 5.0 | 2 165 | 17.4 | 996 | 28.1 | 453 |
| Shallow draft | 154 | 5.0 | 2 165 | 17.4 | 996 | 28.1 | 453 |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | – | – | – | – | – | – | – |
| Pipeline[4] | – | – | – | – | S | S | S |
| **Multiple modes** | **S** | **S** | **5** | **–** | **3** | **–** | **877** |
| Parcel, U.S. Postal Service or courier | S | S | 5 | – | 3 | – | 877 |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **449** |
| **SCTG 32, BASE METAL IN PRIMARY OR SEMIFINISHED FORMS AND IN FINISHED BASIC SHAPES** | | | | | | | |
| **Total** | **4 079** | **100.0** | **3 145** | **100.0** | **973** | **100.0** | **208** |
| **Single modes** | **3 958** | **97.0** | **3 094** | **98.4** | **966** | **99.3** | **214** |
| Truck[3] | 3 883 | 95.2 | 2 971 | 94.5 | 850 | 87.4 | 213 |
| For-hire truck | 2 109 | 51.7 | 1 561 | 49.6 | 701 | 72.1 | 435 |
| Private truck | 1 774 | 43.5 | 1 410 | 44.8 | 149 | 15.3 | 100 |
| Rail | 73 | 1.8 | 123 | 3.9 | 116 | 11.9 | 943 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | 1 | – | S | S | S | S | 1 205 |
| Pipeline[4] | – | – | – | – | S | S | S |
| **Multiple modes** | **53** | **1.3** | **S** | **S** | **S** | **S** | **301** |
| Parcel, U.S. Postal Service or courier | 53 | 1.3 | S | S | S | S | 301 |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **S** |
| **SCTG 33, ARTICLES OF BASE METAL** | | | | | | | |
| **Total** | **6 885** | **100.0** | **4 948** | **100.0** | **1 641** | **100.0** | **218** |
| **Single modes** | **5 624** | **81.7** | **4 854** | **98.1** | **1 602** | **97.6** | **S** |
| Truck[3] | 5 618 | 81.6 | 4 852 | 98.1 | 1 598 | 97.4 | S |
| For-hire truck | 3 067 | 44.5 | 3 209 | 64.8 | S | S | S |
| Private truck | 2 505 | 36.4 | S | S | 116 | 7.0 | S |
| Rail | S | S | S | S | S | S | 1 921 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | 4 | – | – | – | – | – | 1 560 |
| Pipeline[4] | – | – | – | – | S | S | S |
| **Multiple modes** | **1 070** | **15.5** | **77** | **1.6** | **37** | **2.2** | **575** |
| Parcel, U.S. Postal Service or courier | 1 058 | 15.4 | 68 | 1.4 | 22 | 1.4 | 575 |
| Truck and rail | S | S | S | S | S | S | 1 471 |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **S** | **S** | **17** | **.3** | **S** | **S** | **S** |

See footnotes at end of table.

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

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

| SCTG code, description, and mode of transportation | Value | | Tons | | Ton-miles[1] | | Average miles per shipment |
|---|---|---|---|---|---|---|---|
| | 2002 (million dollars) | Percent | 2002 (thousands) | Percent | 2002 (millions) | Percent | |
| **SCTG 34, MACHINERY** | | | | | | | |
| **Total** | **9 994** | **100.0** | **1 934** | **100.0** | **1 097** | **100.0** | **527** |
| **Single modes** | **8 383** | **83.9** | **1 865** | **96.4** | **S** | **S** | **563** |
| Truck[3] | 7 893 | 79.0 | 1 840 | 95.2 | S | S | 331 |
| For-hire truck | 5 727 | 57.3 | S | S | S | S | 627 |
| Private truck | S | S | S | S | S | S | 52 |
| Rail | 66 | .7 | 11 | .6 | 16 | 1.5 | 1 466 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | S | S | S | S | S | S | 1 401 |
| Pipeline[4] | – | – | – | – | S | S | S |
| **Multiple modes** | **1 017** | **10.2** | **S** | **S** | **S** | **S** | **514** |
| Parcel, U.S. Postal Service or courier | 825 | 8.3 | 30 | 1.6 | 21 | 1.9 | 510 |
| Truck and rail | S | S | S | S | S | S | 1 529 |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **S** |
| **SCTG 35, ELECTRONIC AND OTHER ELECTRICAL EQUIPMENT AND COMPONENTS AND OFFICE EQUIPMENT** | | | | | | | |
| **Total** | **11 422** | **100.0** | **986** | **100.0** | **596** | **100.0** | **472** |
| **Single modes** | **6 910** | **60.5** | **832** | **84.4** | **528** | **88.4** | **375** |
| Truck[3] | 6 357 | 55.7 | 818 | 83.0 | 510 | 85.5 | 369 |
| For-hire truck | 3 896 | 34.1 | 480 | 48.7 | 341 | 57.1 | 651 |
| Private truck | 2 427 | 21.3 | 335 | 34.0 | 165 | 27.7 | 315 |
| Rail | 16 | .1 | 5 | .5 | 10 | 1.7 | 2 009 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | 538 | 4.7 | S | S | 8 | 1.3 | 1 069 |
| Pipeline[4] | – | – | – | – | S | S | S |
| **Multiple modes** | **4 012** | **35.1** | **94** | **9.5** | **55** | **9.2** | **635** |
| Parcel, U.S. Postal Service or courier | 4 006 | 35.1 | 93 | 9.4 | 54 | 9.0 | 635 |
| Truck and rail | S | S | S | S | S | S | 1 485 |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **499** | **4.4** | **60** | **6.1** | **14** | **2.3** | **S** |
| **SCTG 36, MOTORIZED AND OTHER VEHICLES (INCLUDING PARTS)** | | | | | | | |
| **Total** | **23 940** | **100.0** | **3 119** | **100.0** | **1 975** | **100.0** | **506** |
| **Single modes** | **21 834** | **91.2** | **2 747** | **88.1** | **1 673** | **84.7** | **266** |
| Truck[3] | 6 777 | 28.3 | 1 623 | 52.0 | 774 | 39.2 | 224 |
| For-hire truck | 5 060 | 21.1 | 1 278 | 41.0 | 721 | 36.5 | 510 |
| Private truck | 1 717 | 7.2 | 345 | 11.1 | 53 | 2.7 | 49 |
| Rail | S | S | S | S | 898 | 45.5 | 819 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | S | S | S | S | S | S | 1 490 |
| Pipeline[4] | – | – | – | – | S | S | S |
| **Multiple modes** | **1 134** | **4.7** | **76** | **2.4** | **47** | **2.4** | **626** |
| Parcel, U.S. Postal Service or courier | 1 042 | 4.4 | S | S | 41 | 2.1 | 626 |
| Truck and rail | S | S | S | S | S | S | 1 209 |
| Truck and water | S | S | S | S | S | S | 979 |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | S | S | S | S | S | S | 3 |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **709** |

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** | **S** | **S** | **S** | **S** | **S** | **S** | **665** |
| **Single modes** | **S** | **S** | **S** | **S** | **S** | **S** | **575** |
| Truck[3] | S | S | S | S | S | S | 471 |
| For-hire truck | S | S | S | S | S | S | 757 |
| Private truck | S | S | S | S | S | S | 460 |
| Rail | – | – | – | – | – | – | – |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | S | S | – | – | S | S | 1 392 |
| Pipeline[4] | – | – | – | – | S | S | S |
| **Multiple modes** | **S** | **S** | **S** | **S** | **S** | **S** | **736** |
| Parcel, U.S. Postal Service or courier | S | S | S | S | S | S | 736 |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **189** |
| **SCTG 38, PRECISION INSTRUMENTS AND APPARATUS** | | | | | | | |
| **Total** | **931** | **100.0** | **S** | **S** | **23** | **100.0** | **519** |
| **Single modes** | **478** | **51.3** | **S** | **S** | **21** | **91.7** | **669** |
| Truck[3] | 456 | 49.0 | S | S | 21 | 91.2 | 553 |
| For-hire truck | 382 | 41.1 | 19 | 13.9 | S | S | 654 |
| Private truck | S | S | S | S | S | S | 286 |
| Rail | – | – | – | – | – | – | – |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | S | S | S | S | S | S | 1 518 |
| Pipeline[4] | – | – | – | – | S | S | S |
| **Multiple modes** | **S** | **S** | **S** | **S** | **S** | **S** | **490** |
| Parcel, U.S. Postal Service or courier | S | S | S | S | S | S | 488 |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | S | S | S | S | S | S | 7 804 |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **495** |
| **SCTG 39, FURNITURE, MATTRESSES AND MATTRESS SUPPORTS, LAMPS, LIGHTING FITTINGS, AND ILLUMINATED SIGNS** | | | | | | | |
| **Total** | **2 596** | **100.0** | **762** | **100.0** | **431** | **100.0** | **652** |
| **Single modes** | **2 317** | **89.3** | **731** | **96.0** | **407** | **94.3** | **443** |
| Truck[3] | 2 303 | 88.7 | 719 | 94.4 | 395 | 91.6 | 443 |
| For-hire truck | 1 137 | 43.8 | 469 | 61.5 | 374 | 86.8 | 758 |
| Private truck | S | S | S | S | 20 | 4.7 | S |
| Rail | S | S | S | S | S | S | 948 |
| 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** | **868** |
| Parcel, U.S. Postal Service or courier | S | S | S | S | S | S | 868 |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **902** |

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** | **16 177** | **100.0** | **2 888** | **100.0** | **1 522** | **100.0** | **766** |
| **Single modes** | **13 425** | **83.0** | **2 585** | **89.5** | **1 284** | **84.3** | **439** |
| Truck[3] | 13 321 | 82.3 | 2 464 | 85.3 | 1 176 | 77.3 | 396 |
| For-hire truck | 5 878 | 36.3 | 1 853 | 64.2 | 944 | 62.0 | 629 |
| Private truck | S | S | 610 | 21.1 | 232 | 15.3 | 105 |
| Rail | S | S | S | S | S | S | 694 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | 21 | .1 | 1 | – | 1 | – | 1 535 |
| Pipeline[4] | – | – | – | – | S | S | S |
| **Multiple modes** | **2 377** | **14.7** | **86** | **3.0** | **73** | **4.8** | **903** |
| Parcel, U.S. Postal Service or courier | 2 368 | 14.6 | 85 | 3.0 | 72 | 4.7 | 903 |
| Truck and rail | S | S | S | S | S | S | 2 199 |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **332** |
| **SCTG 41, WASTE AND SCRAP** | | | | | | | |
| **Total** | **2 888** | **100.0** | **13 342** | **100.0** | **5 168** | **100.0** | **393** |
| **Single modes** | **2 568** | **88.9** | **12 959** | **97.1** | **4 476** | **86.6** | **323** |
| Truck[3] | 1 976 | 68.4 | S | S | 1 683 | 32.6 | 304 |
| For-hire truck | 1 320 | 45.7 | S | S | S | S | 301 |
| Private truck | S | S | S | S | S | S | 317 |
| Rail | S | S | S | S | S | S | 381 |
| 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** | **1 842** |
| Parcel, U.S. Postal Service or courier | S | S | S | S | S | S | 791 |
| Truck and rail | S | S | S | S | S | S | 1 848 |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **535** |
| **SCTG 43, MIXED FREIGHT** | | | | | | | |
| **Total** | **18 213** | **100.0** | **5 930** | **100.0** | **1 778** | **100.0** | **350** |
| **Single modes** | **16 520** | **90.7** | **5 715** | **96.4** | **1 413** | **79.4** | **132** |
| Truck[3] | 16 094 | 88.4 | 5 640 | 95.1 | 1 311 | 73.7 | 119 |
| For-hire truck | 4 667 | 25.6 | 1 982 | 33.4 | 849 | 47.7 | 287 |
| Private truck | 11 427 | 62.7 | 3 658 | 61.7 | 462 | 26.0 | 84 |
| Rail | 407 | 2.2 | 74 | 1.3 | 101 | 5.7 | 1 527 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | S | S | S | S | S | S | 1 334 |
| Pipeline[4] | – | – | – | – | S | S | S |
| **Multiple modes** | **1 314** | **7.2** | **137** | **2.3** | **329** | **18.5** | **731** |
| Parcel, U.S. Postal Service or courier | 727 | 4.0 | 29 | .5 | 18 | 1.0 | 725 |
| Truck and rail | 114 | .6 | 70 | 1.2 | 112 | 6.3 | 1 608 |
| Truck and water | S | S | S | S | S | S | 8 351 |
| Rail and water | S | S | S | S | S | S | 4 114 |
| 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 | |
| **COMMODITY UNKNOWN** | | | | | | | |
| **Total** | **280** | **100.0** | **177** | **100.0** | **65** | **100.0** | **809** |
| **Single modes** | **255** | **91.0** | **176** | **99.4** | **65** | **99.2** | **1 082** |
| Truck[3] | 228 | 81.3 | 168 | 95.0 | 50 | 76.6 | 298 |
| For-hire truck | 86 | 30.8 | 104 | 58.9 | 30 | 45.4 | 224 |
| Private truck | S | S | S | S | S | S | 356 |
| Rail | S | S | S | S | S | S | 1 903 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | S | S | S | S | S | S | 2 194 |
| Pipeline[4] | – | – | – | – | S | S | S |
| **Multiple modes** | **S** | **S** | **1** | **.6** | **S** | **S** | **631** |
| Parcel, U.S. Postal Service or courier | S | S | 1 | .6 | S | S | 631 |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **244** |

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

[1]Ton-miles estimates are based on estimated distances traveled along a modeled transportation network. See "Mileage Calculations" section for additional information.
[2]Estimates exclude shipments of crude petroleum (SCTG 16).
[3]"Truck" as a single mode includes shipments that were made by only private truck, only for-hire truck, or a combination of private truck and for-hire truck.
[4]Estimates for pipeline exclude shipments of crude petroleum.

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

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

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

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

| State of destination | Value | | Tons | | Ton-miles[1] | |
|---|---|---|---|---|---|---|
| | 2002 (million dollars) | Percent | 2002 (thousands) | Percent | 2002 (millions) | Percent |
| **Total** | **185 392** | **100.0** | **254 827** | **100.0** | **72 910** | **100.0** |
| **NEW ENGLAND STATES** | | | | | | |
| Connecticut | 552 | .3 | 56 | – | 70 | .1 |
| Maine | 156 | – | 72 | – | 82 | .1 |
| Massachusetts | 973 | .5 | 159 | – | 204 | .3 |
| New Hampshire | S | S | S | S | 46 | – |
| Rhode Island | 96 | – | S | S | S | S |
| Vermont | 77 | – | 3 | – | 4 | – |
| **MIDDLE ATLANTIC STATES** | | | | | | |
| New Jersey | 2 860 | 1.5 | 884 | .3 | 1 012 | 1.4 |
| New York | 3 282 | 1.8 | 748 | .3 | 772 | 1.1 |
| Pennsylvania | 2 974 | 1.6 | 1 672 | .7 | 1 583 | 2.2 |
| **EAST NORTH CENTRAL STATES** | | | | | | |
| Illinois | 12 294 | 6.6 | 16 904 | 6.6 | 2 536 | 3.5 |
| Indiana | 4 988 | 2.7 | 5 148 | 2.0 | 1 759 | 2.4 |
| Michigan | 3 162 | 1.7 | 1 607 | .6 | 1 029 | 1.4 |
| Ohio | 10 474 | 5.6 | 2 142 | .8 | 1 212 | 1.7 |
| Wisconsin | 2 765 | 1.5 | 2 036 | .8 | 989 | 1.4 |
| **WEST NORTH CENTRAL STATES** | | | | | | |
| Iowa | 4 216 | 2.3 | 5 649 | 2.2 | 1 766 | 2.4 |
| Kansas | 9 736 | 5.3 | 9 871 | 3.9 | 1 538 | 2.1 |
| Minnesota | 2 372 | 1.3 | 1 530 | .6 | 846 | 1.2 |
| Missouri | 56 661 | 30.6 | 128 453 | 50.4 | 6 500 | 8.9 |
| Nebraska | 3 891 | 2.1 | 5 788 | 2.3 | 1 868 | 2.6 |
| North Dakota | 345 | .2 | 339 | .1 | 364 | .5 |
| South Dakota | 387 | .2 | 231 | – | 140 | .2 |
| **SOUTH ATLANTIC STATES** | | | | | | |
| Delaware | S | S | 34 | – | 35 | – |
| District of Columbia | 92 | – | 8 | – | 8 | – |
| Florida | 2 356 | 1.3 | 1 854 | .7 | 2 267 | 3.1 |
| Georgia | 3 206 | 1.7 | 2 739 | 1.1 | 1 973 | 2.7 |
| Maryland | 1 749 | .9 | 221 | – | 230 | .3 |
| North Carolina | 1 563 | .8 | 658 | .3 | 613 | .8 |
| South Carolina | 559 | .3 | 226 | – | 199 | .3 |
| Virginia | 1 150 | .6 | 723 | .3 | 789 | 1.1 |
| West Virginia | 357 | .2 | S | S | S | S |
| **EAST SOUTH CENTRAL STATES** | | | | | | |
| Alabama | 1 503 | .8 | S | S | S | S |
| Kentucky | S | S | S | S | 1 500 | 2.1 |
| Mississippi | 1 180 | .6 | 1 859 | .7 | S | S |
| Tennessee | 4 408 | 2.4 | 7 325 | 2.9 | 2 833 | 3.9 |
| **WEST SOUTH CENTRAL STATES** | | | | | | |
| Arkansas | 5 559 | 3.0 | 12 237 | 4.8 | 3 787 | 5.2 |
| Louisiana | 2 026 | 1.1 | 11 930 | 4.7 | 10 727 | 14.7 |
| Oklahoma | 5 096 | 2.7 | 4 125 | 1.6 | 1 244 | 1.7 |
| Texas | 9 121 | 4.9 | 13 102 | 5.1 | 9 854 | 13.5 |
| **MOUNTAIN STATES** | | | | | | |
| Arizona | 2 173 | 1.2 | 863 | .3 | 1 168 | 1.6 |
| Colorado | 2 455 | 1.3 | 1 187 | .5 | 854 | 1.2 |
| Idaho | 102 | – | 29 | – | 49 | – |
| Montana | 355 | .2 | 70 | – | 95 | .1 |
| Nevada | 398 | .2 | 78 | – | 127 | .2 |
| New Mexico | 338 | .2 | S | S | S | S |
| Utah | S | S | 564 | .2 | 667 | .9 |
| Wyoming | 132 | – | S | S | S | S |
| **PACIFIC STATES** | | | | | | |
| Alaska | 260 | .1 | 20 | – | 101 | .1 |
| California | 6 087 | 3.3 | 2 445 | 1.0 | 4 518 | 6.2 |
| Hawaii | 388 | .2 | 41 | – | 196 | .3 |
| Oregon | 764 | .4 | S | S | S | S |
| Washington | 1 684 | .9 | 371 | .1 | 780 | 1.1 |

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

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

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

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

# Table 8. **Inbound Shipment Characteristics by State of Origin for State of Destination: 2002**

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

| State of origin | Value | | Tons | | Ton-miles[1] | |
|---|---|---|---|---|---|---|
| | 2002 (million dollars) | Percent | 2002 (thousands) | Percent | 2002 (millions) | Percent |
| **Total** | **177 887** | **100.0** | **237 221** | **100.0** | **74 033** | **100.0** |
| **NEW ENGLAND STATES** | | | | | | |
| Connecticut | 591 | .3 | 110 | – | 132 | .2 |
| Maine | 119 | – | S | S | S | S |
| Massachusetts | 1 072 | .6 | 152 | – | 189 | .3 |
| New Hampshire | 221 | .1 | 49 | – | 65 | – |
| Rhode Island | 114 | – | 14 | – | 18 | – |
| Vermont | 101 | – | 36 | – | 44 | – |
| **MIDDLE ATLANTIC STATES** | | | | | | |
| New Jersey | 1 848 | 1.0 | 474 | .2 | 510 | .7 |
| New York | 2 696 | 1.5 | 902 | .4 | 990 | 1.3 |
| Pennsylvania | 2 873 | 1.6 | 872 | .4 | 818 | 1.1 |
| **EAST NORTH CENTRAL STATES** | | | | | | |
| Illinois | 14 678 | 8.3 | 16 908 | 7.1 | 2 568 | 3.5 |
| Indiana | 7 005 | 3.9 | 2 933 | 1.2 | 1 139 | 1.5 |
| Michigan | 12 389 | 7.0 | 2 424 | 1.0 | 1 583 | 2.1 |
| Ohio | 7 039 | 4.0 | 2 292 | 1.0 | 1 363 | 1.8 |
| Wisconsin | 3 244 | 1.8 | 1 740 | .7 | 842 | 1.1 |
| **WEST NORTH CENTRAL STATES** | | | | | | |
| Iowa | 3 717 | 2.1 | 3 020 | 1.3 | 933 | 1.3 |
| Kansas | 9 552 | 5.4 | 11 257 | 4.7 | 1 245 | 1.7 |
| Minnesota | 3 248 | 1.8 | 1 382 | .6 | 866 | 1.2 |
| Missouri | 56 661 | 31.9 | 128 453 | 54.1 | 6 500 | 8.8 |
| Nebraska | 1 746 | 1.0 | 1 140 | .5 | 379 | .5 |
| North Dakota | 245 | .1 | S | S | S | S |
| South Dakota | 379 | .2 | S | S | S | S |
| **SOUTH ATLANTIC STATES** | | | | | | |
| Delaware | 199 | .1 | 97 | – | 97 | .1 |
| District of Columbia | S | S | S | S | S | S |
| Florida | 1 398 | .8 | 601 | .3 | 715 | 1.0 |
| Georgia | 2 337 | 1.3 | 1 197 | .5 | 837 | 1.1 |
| Maryland | 773 | .4 | 163 | – | 145 | .2 |
| North Carolina | 2 223 | 1.2 | 481 | .2 | 436 | .6 |
| South Carolina | 738 | .4 | 425 | .2 | 349 | .5 |
| Virginia | 1 036 | .6 | 376 | .2 | 324 | .4 |
| West Virginia | 199 | .1 | 140 | – | 87 | .1 |
| **EAST SOUTH CENTRAL STATES** | | | | | | |
| Alabama | 1 196 | .7 | 947 | .4 | 569 | .8 |
| Kentucky | 4 557 | 2.6 | 2 020 | .9 | 819 | 1.1 |
| Mississippi | 2 663 | 1.5 | 1 011 | .4 | 484 | .7 |
| Tennessee | 6 225 | 3.5 | 3 192 | 1.3 | 977 | 1.3 |
| **WEST SOUTH CENTRAL STATES** | | | | | | |
| Arkansas | 4 766 | 2.7 | 4 448 | 1.9 | 1 475 | 2.0 |
| Louisiana | 2 055 | 1.2 | 2 503 | 1.1 | 2 107 | 2.8 |
| Oklahoma | 1 855 | 1.0 | 2 901 | 1.2 | 857 | 1.2 |
| Texas | 5 536 | 3.1 | 3 195 | 1.3 | 2 181 | 2.9 |
| **MOUNTAIN STATES** | | | | | | |
| Arizona | 449 | .3 | S | S | 74 | .1 |
| Colorado | 886 | .5 | S | S | 1 257 | 1.7 |
| Idaho | 409 | .2 | 304 | .1 | 465 | .6 |
| Montana | 70 | – | 101 | – | 151 | .2 |
| Nevada | 228 | .1 | 79 | – | 125 | .2 |
| New Mexico | 115 | – | 281 | .1 | 269 | .4 |
| Utah | 241 | .1 | 639 | .3 | 844 | 1.1 |
| Wyoming | 290 | .2 | 32 007 | 13.5 | 32 307 | 43.6 |
| **PACIFIC STATES** | | | | | | |
| Alaska | S | S | S | S | S | S |
| California | 6 432 | 3.6 | 1 227 | .5 | 2 274 | 3.1 |
| Hawaii | S | S | S | S | S | S |
| Oregon | 856 | .5 | 905 | .4 | 1 962 | 2.6 |
| Washington | 608 | .3 | 144 | – | 301 | .4 |

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

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

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

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

# Discussion of Survey Changes and Comparing Estimates

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

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

## INDUSTRY COVERAGE CHANGES

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

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

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

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

No adjustments have been made to the 1993 CFS estimates.

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

## AUXILIARY ESTABLISHMENT COVERAGE CHANGES

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

## COMPARISON DATA AND STATISTICAL VALIDITY

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

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

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

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

| Mode of transportation | Value | | | Tons | | | Ton-miles[1] | | | Average miles per shipment | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2002 (million dollars) | 1997 (million dollars) | Percent change | 2002 (thousands) | 1997 (thousands) | Percent change | 2002 (millions) | 1997 (millions) | Percent change | 2002 | 1997 | Percent change |
| **Total** | **185 392** | **147 352** | **25.8** | **254 827** | **187 891** | **35.6** | **72 910** | **49 352** | **47.7** | **517** | **555** | **–6.7** |
| **Single modes** | **157 782** | **121 603** | **29.8** | **247 143** | **181 860** | **35.9** | **67 095** | **46 806** | **43.3** | **233** | **222** | **4.9** |
| Truck[2] | 134 904 | 99 343 | 35.8 | 189 434 | 147 656 | 28.3 | 36 478 | 23 104 | 57.9 | 187 | 153 | 22.6 |
| Rail | 19 652 | 18 338 | 7.2 | 31 118 | 14 308 | 117.5 | 18 270 | 10 285 | 77.6 | 674 | 860 | –21.6 |
| Water | 1 043 | 1 135 | –8.1 | S | 19 786 | S | 12 255 | 13 357 | –8.3 | S | 697 | S |
| Air (includes truck and air) | 2 170 | 2 771 | –21.7 | 65 | 52 | 24.7 | 92 | 60 | 51.7 | 1 347 | 1 320 | 2.1 |
| Pipeline[3] | S | 16 | S | S | 58 | S | S | S | S | S | S | S |
| **Multiple modes** | **23 421** | **21 000** | **11.5** | **5 143** | **2 111** | **143.6** | **4 717** | **1 975** | **138.8** | **833** | **825** | **.9** |
| Parcel, U.S. Postal Service or courier | 21 588 | 18 779 | 15.0 | 1 042 | 694 | 50.2 | 822 | 490 | 67.9 | 832 | 824 | .9 |
| Truck and rail | 1 225 | 2 202 | –44.4 | 1 132 | 1 408 | –19.6 | 1 597 | 1 419 | 12.5 | 1 668 | 1 188 | 40.4 |
| All other multiple modes | 608 | S | S | S | 10 | S | S | S | S | S | 1 783 | S |
| **Other and unknown modes** | **4 190** | **4 749** | **–11.8** | **2 541** | **3 920** | **–35.2** | **1 099** | **571** | **92.4** | **246** | **71** | **246.5** |

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

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

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

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

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

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

| SCTG code | Commodity description | Value | | | Tons | | | Ton-miles[1] | | | Average miles per shipment | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2002 (million dollars) | 1997 (million dollars) | Percent change | 2002 (thousands) | 1997 (thousands) | Percent change | 2002 (millions) | 1997 (millions) | Percent change | 2002 | 1997 | Percent change |
| | **Total[2]** | **185 392** | **147 352** | **25.8** | **254 827** | **187 891** | **35.6** | **72 910** | **49 352** | **47.7** | **517** | **555** | **–6.7** |
| 01-05 | Agricultural products and fish | 11 307 | 10 737 | 5.3 | 52 611 | 32 114 | 63.8 | 19 410 | 12 944 | 50.0 | 122 | 97 | 25.2 |
| 06-09 | Grains, alcohol, and tobacco products | 19 921 | 16 160 | 23.3 | 22 479 | 17 507 | 28.4 | 9 417 | 6 799 | 38.5 | S | 217 | S |
| 10-14 | Stones, nonmetallic minerals, and metallic ores | 591 | 855 | –30.8 | 88 812 | 65 825 | 34.9 | 13 961 | 9 365 | 49.1 | 43 | 32 | 33.0 |
| 15-19 | Coal and petroleum products | 3 634 | 3 635 | – | 11 775 | 13 082 | –10.0 | 553 | 839 | –34.1 | 33 | S | S |
| 20-24 | Basic chemicals, chemical, and pharmaceutical products | 30 370 | 22 159 | 37.1 | 18 208 | 12 974 | 40.3 | 6 152 | 4 980 | 23.5 | 375 | 396 | –5.2 |
| 25-30 | Logs, wood products, and textile and leather | 17 815 | 15 412 | 15.6 | 7 198 | 7 025 | 2.5 | 2 887 | 2 381 | 21.3 | 898 | 968 | –7.3 |
| 31-34 | Base metal and machinery | 24 044 | 18 416 | 30.6 | 22 499 | 25 778 | –12.7 | 7 254 | 5 069 | 43.1 | 312 | 258 | 21.2 |
| 35-38 | Electronic, motorized vehicles, and precision instruments | 37 557 | 41 300 | –9.1 | 8 145 | 5 518 | 47.6 | 4 311 | 4 110 | 4.9 | 490 | 369 | 32.8 |
| 39-43 | Furniture, mixed freight and misc. manufactured prod. | 39 874 | 17 556 | 127.1 | 22 923 | 7 599 | 201.6 | 8 900 | 2 791 | 218.9 | 539 | 586 | –8.1 |
| -- | Commodity unknown | 280 | 1 121 | –75.0 | 177 | 469 | –62.3 | 65 | 74 | –12.2 | 809 | 710 | 13.9 |

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

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

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

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

# Appendix A. Comparability With the 1993 and 1997 Commodity Flow Surveys

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

**Industry Coverage**

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

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

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

**Commodity Classification System**

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

**Sample Size**

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

**Survey Methodology**

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

**Reported Mode of Transportation**

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

**Data Items Requested**

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

# Appendix B.
# Reliability of the Estimates

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

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

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

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

### Sampling Error

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

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

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

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

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

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

### Nonsampling Error

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

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

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

## DEFINITION OF TERMS

### Confidentiality

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

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

### Disclosure Limitation

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

### Unpublished Estimates

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

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

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

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

| Mode of transportation | Value | | Tons | | Ton-miles | | Average miles per shipment—coefficient of variation |
|---|---|---|---|---|---|---|---|
| | Coefficient of variation of number | Standard error of percentage | Coefficient of variation of number | Standard error of percentage | Coefficient of variation of number | Standard error of percentage | |
| **Total** | **4.5** | **–** | **10.2** | **–** | **9.8** | **–** | **8.6** |
| **Single modes** | **5.4** | **1.1** | **10.7** | **1.2** | **10.0** | **1.9** | **13.9** |
| Truck | 4.3 | 2.9 | 13.4 | 4.5 | 14.5 | 6.2 | 12.3 |
| For-hire truck | 6.9 | 3.4 | 14.2 | 2.9 | 15.6 | 4.5 | 9.3 |
| Private truck | 11.4 | 3.2 | 20.1 | 4.2 | 22.8 | 3.0 | 22.9 |
| Rail | 39.1 | 3.4 | 17.3 | 3.1 | 17.7 | 5.0 | 8.8 |
| Water | 33.8 | .2 | S | S | 35.9 | 5.3 | S |
| Shallow draft | 33.8 | .2 | S | S | 35.9 | 5.3 | S |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | 28.7 | .3 | 29.3 | – | 34.9 | – | 5.7 |
| Pipeline | S | S | S | S | S | S | S |
| **Multiple modes** | **6.3** | **1.0** | **48.5** | **1.1** | **34.2** | **2.0** | **4.8** |
| Parcel, U.S. Postal Service or courier | 8.3 | 1.0 | 22.4 | .1 | 31.3 | .4 | 4.8 |
| Truck and rail | 32.2 | .3 | 40.3 | .2 | 36.9 | 1.1 | 15.6 |
| Truck and water | S | S | S | S | S | S | 30.6 |
| Rail and water | 48.8 | .1 | S | S | S | S | 27.2 |
| Other multiple modes | S | S | S | S | S | S | S |
| **Other and unknown modes** | **26.8** | **.6** | **40.3** | **.6** | **46.0** | **.6** | **34.1** |

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

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

## Table B–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** | **1.1** | **1.8** | **1.2** | **.5** | **1.9** | **.9** |
| Truck | 2.9 | 3.8 | 4.5 | 3.2 | 6.2 | 3.3 |
| For-hire truck | 3.4 | 2.1 | 2.9 | 3.7 | 4.5 | 2.6 |
| Private truck | 3.2 | 2.0 | 4.2 | 3.7 | 3.0 | 1.4 |
| Rail | 3.4 | 3.8 | 3.1 | 1.5 | 5.0 | 2.8 |
| Water | .2 | .2 | S | 2.7 | 5.3 | 4.8 |
| Shallow draft | .2 | .2 | S | 2.7 | 5.3 | 4.8 |
| Great Lakes | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – |
| Air (includes truck and air) | .3 | .4 | – | – | – | – |
| Pipeline | S | – | S | – | S | S |
| **Multiple modes** | **1.0** | **1.7** | **1.1** | **.3** | **2.0** | **.9** |
| Parcel, U.S. Postal Service or courier | 1.0 | 1.4 | .1 | – | .4 | .3 |
| Truck and rail | .3 | .4 | .2 | .3 | 1.1 | .7 |
| Truck and water | S | S | S | S | S | S |
| Rail and water | .1 | – | S | – | S | – |
| Other multiple modes | S | S | S | S | S | S |
| **Other and unknown modes** | **.6** | **.7** | **.6** | **.3** | **.6** | **.2** |

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

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

## Table B–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** | **9.8** | **–** | **8.6** |
| Truck | 14.5 | 6.2 | 12.3 |
| Rail | 17.7 | 5.0 | 8.8 |
| Shallow draft | 35.9 | 5.3 | S |
| Great Lakes | – | – | – |
| Deep draft | – | – | – |
| Air | 34.9 | – | 5.7 |
| Parcel, U.S. Postal Service or courier | S | S | 31.6 |
| Pipeline | S | S | S |
| Other and unknown modes | 46.0 | .6 | 34.1 |

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

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

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

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

| Mode of transportation and distance shipped (based on Great Circle Distance) | Value | | Tons | | Ton-miles | |
|---|---|---|---|---|---|---|
| | Coefficient of variation of number | Standard error of percentage | Coefficient of variation of number | Standard error of percentage | Coefficient of variation of number | Standard error of percentage |
| **Total** | **4.5** | **–** | **10.2** | **–** | **9.8** | **–** |
| Less than 50 miles | 12.3 | 3.1 | 12.8 | 2.4 | 17.6 | .4 |
| 50 to 99 miles | 8.9 | .5 | 28.3 | 1.6 | 27.0 | .9 |
| 100 to 249 miles | 10.5 | 1.7 | 15.2 | 1.9 | 14.1 | 2.3 |
| 250 to 499 miles | 8.3 | 1.5 | 13.4 | 1.5 | 14.6 | 1.7 |
| 500 to 749 miles | 24.6 | 3.3 | 17.8 | 1.8 | 20.2 | 4.4 |
| 750 to 999 miles | 10.8 | .7 | 16.1 | .3 | 17.5 | .9 |
| 1,000 to 1,499 miles | 12.5 | .7 | 10.7 | .3 | 9.9 | 1.4 |
| 1,500 to 1,999 miles | 10.8 | .4 | 21.3 | .2 | 21.7 | 1.4 |
| 2,000 miles or more | 30.3 | .1 | 27.1 | – | 29.1 | .1 |
| **Single modes** | **5.4** | **–** | **10.7** | **–** | **10.0** | **–** |
| Less than 50 miles | 12.6 | 3.7 | 13.2 | 2.4 | 17.9 | .5 |
| 50 to 99 miles | 8.8 | .5 | 28.7 | 1.6 | 27.4 | 1.0 |
| 100 to 249 miles | 11.3 | 1.8 | 16.2 | 1.9 | 15.1 | 2.5 |
| 250 to 499 miles | 10.2 | 1.8 | 13.4 | 1.5 | 14.6 | 1.6 |
| 500 to 749 miles | 28.5 | 3.7 | 16.6 | 1.7 | 18.6 | 4.2 |
| 750 to 999 miles | 13.6 | .8 | 16.2 | .3 | 17.7 | .9 |
| 1,000 to 1,499 miles | 16.8 | .8 | 8.3 | .3 | 8.8 | 1.2 |
| 1,500 to 1,999 miles | 13.6 | .4 | 27.4 | .2 | 28.1 | 1.3 |
| 2,000 miles or more | 47.4 | – | S | S | S | S |
| **Truck** | **4.3** | **–** | **13.4** | **–** | **14.5** | **–** |
| Less than 50 miles | 12.7 | 3.8 | 13.3 | 3.8 | 14.8 | .8 |
| 50 to 99 miles | 8.8 | .8 | 29.0 | 1.6 | 28.0 | 1.1 |
| 100 to 249 miles | 11.1 | 1.6 | 23.7 | 2.4 | 25.4 | 2.2 |
| 250 to 499 miles | 10.8 | 1.8 | 18.2 | 1.9 | 20.2 | 2.5 |
| 500 to 749 miles | 9.7 | .7 | 18.3 | .7 | 19.0 | 1.7 |
| 750 to 999 miles | 13.2 | .7 | 11.0 | .3 | 11.4 | 1.6 |
| 1,000 to 1,499 miles | 14.1 | .5 | 14.8 | .3 | 14.4 | 1.7 |
| 1,500 to 1,999 miles | 16.8 | .3 | 31.3 | .2 | 32.6 | 1.2 |
| 2,000 miles or more | S | S | S | S | S | S |
| **For-hire truck** | **6.9** | **–** | **14.2** | **–** | **15.6** | **–** |
| Less than 50 miles | 6.0 | 1.0 | 13.6 | 4.5 | 23.0 | .6 |
| 50 to 99 miles | 13.9 | .6 | 21.2 | 1.0 | 23.7 | .3 |
| 100 to 249 miles | 10.9 | 1.8 | 30.7 | 3.7 | 31.8 | 2.9 |
| 250 to 499 miles | 11.3 | 1.7 | 22.9 | 2.3 | 24.4 | 2.9 |
| 500 to 749 miles | 9.5 | .6 | 12.3 | .9 | 12.5 | 1.6 |
| 750 to 999 miles | 11.1 | .9 | 10.1 | .5 | 10.6 | 1.9 |
| 1,000 to 1,499 miles | 12.4 | .6 | 14.2 | .4 | 13.6 | 1.9 |
| 1,500 to 1,999 miles | 17.8 | .5 | 35.2 | .3 | 36.6 | 1.6 |
| 2,000 miles or more | S | S | S | S | S | S |
| **Private truck** | **11.4** | **–** | **20.1** | **–** | **22.8** | **–** |
| Less than 50 miles | 17.7 | 5.5 | 15.3 | 4.1 | 15.7 | 1.6 |
| 50 to 99 miles | 16.5 | 1.8 | 38.8 | 2.7 | 37.1 | 2.3 |
| 100 to 249 miles | 29.4 | 3.8 | 30.7 | 1.6 | 28.2 | 2.8 |
| 250 to 499 miles | 18.8 | 1.8 | 22.4 | .6 | 22.7 | 1.7 |
| 500 to 749 miles | 29.6 | .9 | S | S | S | S |
| 750 to 999 miles | 28.7 | .6 | 28.7 | .3 | 28.7 | 2.4 |
| 1,000 to 1,499 miles | 34.1 | .4 | 40.0 | .3 | 39.1 | 2.6 |
| 1,500 to 1,999 miles | 32.6 | .2 | 32.1 | – | 33.7 | 1.0 |
| 2,000 miles or more | – | – | – | – | – | – |
| **Rail** | **39.1** | **–** | **17.3** | **–** | **17.7** | **–** |
| Less than 50 miles | S | S | S | S | S | S |
| 50 to 99 miles | S | S | 41.6 | 1.1 | S | S |
| 100 to 249 miles | 32.8 | 3.1 | 33.5 | 6.4 | 37.7 | 4.4 |
| 250 to 499 miles | 24.1 | 5.9 | 23.1 | 5.2 | 22.1 | 3.8 |
| 500 to 749 miles | S | S | 26.6 | 4.5 | 25.1 | 5.2 |
| 750 to 999 miles | 34.9 | 4.9 | 34.6 | 2.4 | 35.2 | 3.3 |
| 1,000 to 1,499 miles | 36.1 | 4.5 | 35.4 | .9 | 36.6 | 2.1 |
| 1,500 to 1,999 miles | 43.3 | 2.7 | 47.6 | .4 | 48.1 | 1.7 |
| 2,000 miles or more | – | – | – | – | – | – |
| **Water** | **33.8** | **–** | **S** | **S** | **35.9** | **–** |
| Less than 50 miles | S | S | S | S | S | S |
| 50 to 99 miles | – | – | – | – | – | – |
| 100 to 249 miles | 39.9 | 12.4 | 28.0 | 12.4 | 28.0 | 12.5 |
| 250 to 499 miles | S | S | 41.4 | 5.4 | 44.1 | 5.2 |
| 500 to 749 miles | 47.0 | 11.7 | 39.1 | 7.9 | 39.3 | 10.0 |
| 750 to 999 miles | – | – | – | – | – | – |
| 1,000 to 1,499 miles | – | – | – | – | – | – |
| 1,500 to 1,999 miles | – | – | – | – | – | – |
| 2,000 miles or more | – | – | – | – | – | – |
| **Shallow draft** | **33.8** | **–** | **S** | **S** | **35.9** | **–** |
| Less than 50 miles | S | S | S | S | S | S |
| 50 to 99 miles | – | – | – | – | – | – |
| 100 to 249 miles | 39.9 | 12.4 | 28.0 | 12.4 | 28.0 | 12.5 |
| 250 to 499 miles | S | S | 41.4 | 5.4 | 44.1 | 5.2 |
| 500 to 749 miles | 47.0 | 11.7 | 39.1 | 7.9 | 39.3 | 10.0 |
| 750 to 999 miles | – | – | – | – | – | – |
| 1,000 to 1,499 miles | – | – | – | – | – | – |
| 1,500 to 1,999 miles | – | – | – | – | – | – |
| 2,000 miles or more | – | – | – | – | – | – |

See footnotes at end of table.

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

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

| Mode of transportation and distance shipped (based on Great Circle Distance) | Value | | Tons | | Ton-miles | |
|---|---|---|---|---|---|---|
| | Coefficient of variation of number | Standard error of percentage | Coefficient of variation of number | Standard error of percentage | Coefficient of variation of number | Standard error of percentage |
| **Single modes**—Con. | | | | | | |
| **Great Lakes** | **–** | **–** | **–** | **–** | **–** | **–** |
| Less than 50 miles | – | – | – | – | – | – |
| 50 to 99 miles | – | – | – | – | – | – |
| 100 to 249 miles | – | – | – | – | – | – |
| 250 to 499 miles | – | – | – | – | – | – |
| 500 to 749 miles | – | – | – | – | – | – |
| 750 to 999 miles | – | – | – | – | – | – |
| 1,000 to 1,499 miles | – | – | – | – | – | – |
| 1,500 to 1,999 miles | – | – | – | – | – | – |
| 2,000 miles or more | – | – | – | – | – | – |
| **Deep draft** | **–** | **–** | **–** | **–** | **–** | **–** |
| Less than 50 miles | – | – | – | – | – | – |
| 50 to 99 miles | – | – | – | – | – | – |
| 100 to 249 miles | – | – | – | – | – | – |
| 250 to 499 miles | – | – | – | – | – | – |
| 500 to 749 miles | – | – | – | – | – | – |
| 750 to 999 miles | – | – | – | – | – | – |
| 1,000 to 1,499 miles | – | – | – | – | – | – |
| 1,500 to 1,999 miles | – | – | – | – | – | – |
| 2,000 miles or more | – | – | – | – | – | – |
| **Air (includes truck and air)** | **28.7** | **–** | **29.3** | **–** | **34.9** | **–** |
| Less than 50 miles | – | – | – | – | – | – |
| 50 to 99 miles | S | S | S | S | S | S |
| 100 to 249 miles | 42.0 | 3.8 | 49.8 | 2.8 | S | S |
| 250 to 499 miles | 33.7 | 6.0 | 38.9 | 6.8 | 38.8 | 4.8 |
| 500 to 749 miles | 32.7 | 6.5 | 40.1 | 5.7 | 46.6 | 6.5 |
| 750 to 999 miles | 27.2 | 5.2 | 32.4 | 3.5 | 31.6 | 5.6 |
| 1,000 to 1,499 miles | 45.6 | 3.0 | 34.6 | 4.1 | 36.9 | 4.6 |
| 1,500 to 1,999 miles | 40.7 | 5.9 | S | S | S | S |
| 2,000 miles or more | S | S | S | S | S | S |
| **Pipeline** | **S** | **S** | **S** | **S** | **S** | **S** |
| Less than 50 miles | S | S | S | S | S | S |
| 50 to 99 miles | – | – | – | – | S | S |
| 100 to 249 miles | – | – | – | – | S | S |
| 250 to 499 miles | – | – | – | – | 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** | **6.3** | **–** | **48.5** | **–** | **34.2** | **–** |
| Less than 50 miles | 16.6 | 1.2 | 27.1 | 1.6 | 13.9 | – |
| 50 to 99 miles | 19.2 | .7 | 40.6 | .7 | 40.0 | – |
| 100 to 249 miles | 18.2 | 2.1 | S | S | S | S |
| 250 to 499 miles | 8.7 | 1.1 | 24.7 | 3.0 | 29.3 | 1.2 |
| 500 to 749 miles | 8.6 | 1.2 | S | S | S | S |
| 750 to 999 miles | 8.9 | 1.0 | 27.7 | 3.1 | 29.6 | 3.3 |
| 1,000 to 1,499 miles | 16.9 | 1.5 | 29.1 | 5.4 | 34.2 | 5.8 |
| 1,500 to 1,999 miles | 12.4 | .7 | S | S | S | S |
| 2,000 miles or more | 30.8 | .9 | 27.6 | 1.2 | 29.5 | 4.6 |
| **Parcel, U.S. Postal Service or courier** | **8.3** | **–** | **22.4** | **–** | **31.3** | **–** |
| Less than 50 miles | 17.6 | 1.3 | 34.1 | 3.4 | 16.6 | – |
| 50 to 99 miles | 19.6 | .9 | 20.0 | .9 | 20.4 | .2 |
| 100 to 249 miles | 18.9 | 2.4 | 14.9 | 2.5 | 14.4 | 1.2 |
| 250 to 499 miles | 8.7 | 1.6 | 25.4 | 2.3 | 28.4 | 2.2 |
| 500 to 749 miles | 11.7 | 1.4 | 23.3 | 2.0 | 24.7 | 1.8 |
| 750 to 999 miles | 11.3 | 1.0 | 29.1 | 1.9 | 29.1 | 2.6 |
| 1,000 to 1,499 miles | 17.7 | 1.5 | 28.2 | 1.5 | 28.4 | 2.4 |
| 1,500 to 1,999 miles | 18.8 | .7 | 39.0 | 1.1 | 39.4 | 2.3 |
| 2,000 miles or more | 46.1 | .2 | S | S | S | S |
| **Truck and rail** | **32.2** | **–** | **40.3** | **–** | **36.9** | **–** |
| Less than 50 miles | – | – | – | – | – | – |
| 50 to 99 miles | S | S | S | S | S | S |
| 100 to 249 miles | S | S | S | S | S | S |
| 250 to 499 miles | S | S | S | S | S | S |
| 500 to 749 miles | S | S | S | S | S | S |
| 750 to 999 miles | 42.2 | 9.4 | 47.6 | 7.6 | 47.1 | 7.3 |
| 1,000 to 1,499 miles | 36.0 | 8.9 | S | S | S | S |
| 1,500 to 1,999 miles | 44.3 | 12.2 | S | S | S | S |
| 2,000 miles or more | S | S | S | S | S | S |
| **Truck and water** | **S** | **S** | **S** | **S** | **S** | **S** |
| Less than 50 miles | – | – | – | – | – | – |
| 50 to 99 miles | – | – | – | – | – | – |
| 100 to 249 miles | – | – | – | – | – | – |
| 250 to 499 miles | – | – | – | – | – | – |
| 500 to 749 miles | S | S | S | S | S | S |
| 750 to 999 miles | S | S | S | S | S | S |
| 1,000 to 1,499 miles | S | S | S | S | S | S |
| 1,500 to 1,999 miles | – | – | – | – | – | – |
| 2,000 miles or more | S | S | S | S | S | S |

See footnotes at end of table.

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

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

| Mode of transportation and distance shipped (based on Great Circle Distance) | Value | | Tons | | Ton-miles | |
|---|---|---|---|---|---|---|
| | Coefficient of variation of number | Standard error of percentage | Coefficient of variation of number | Standard error of percentage | Coefficient of variation of number | Standard error of percentage |
| **Multiple modes**—Con. | | | | | | |
| **Rail and water** | **48.8** | **–** | **S** | **S** | **S** | **S** |
| Less than 50 miles | – | – | – | – | – | – |
| 50 to 99 miles | – | – | – | – | – | – |
| 100 to 249 miles | S | S | S | S | S | S |
| 250 to 499 miles | – | – | – | – | – | – |
| 500 to 749 miles | S | S | S | S | S | S |
| 750 to 999 miles | – | – | – | – | – | – |
| 1,000 to 1,499 miles | – | – | – | – | – | – |
| 1,500 to 1,999 miles | – | – | – | – | – | – |
| 2,000 miles or more | S | S | S | S | S | S |
| **Other multiple modes** | **S** | **S** | **S** | **S** | **S** | **S** |
| Less than 50 miles | S | S | S | S | S | S |
| 50 to 99 miles | – | – | – | – | – | – |
| 100 to 249 miles | – | – | – | – | – | – |
| 250 to 499 miles | – | – | – | – | – | – |
| 500 to 749 miles | S | S | S | S | S | S |
| 750 to 999 miles | S | S | S | S | S | S |
| 1,000 to 1,499 miles | – | – | – | – | – | – |
| 1,500 to 1,999 miles | – | – | – | – | – | – |
| 2,000 miles or more | – | – | – | – | – | – |
| **Other and unknown modes** | **26.8** | **–** | **40.3** | **–** | **46.0** | **–** |
| Less than 50 miles | 24.8 | 7.2 | S | S | S | S |
| 50 to 99 miles | S | S | 38.9 | 3.1 | 43.4 | 1.1 |
| 100 to 249 miles | 38.8 | 3.3 | 38.6 | 3.4 | 36.7 | 3.4 |
| 250 to 499 miles | 40.0 | 3.2 | S | S | S | S |
| 500 to 749 miles | 27.0 | 2.9 | S | S | S | S |
| 750 to 999 miles | S | S | 37.9 | 1.2 | 37.1 | 7.1 |
| 1,000 to 1,499 miles | S | S | S | S | S | S |
| 1,500 to 1,999 miles | S | S | S | S | S | S |
| 2,000 miles or more | S | S | S | S | S | S |

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

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

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

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

| Mode of transportation and shipment weight | Value | | Tons | | Ton-miles | | Average miles per shipment—coefficient of variation |
|---|---|---|---|---|---|---|---|
| | Coefficient of variation of number | Standard error of percentage | Coefficient of variation of number | Standard error of percentage | Coefficient of variation of number | Standard error of percentage | |
| **Total** | **4.5** | **–** | **10.2** | **–** | **9.8** | **–** | **8.6** |
| Less than 50 lb | 6.4 | .7 | 9.5 | – | 14.5 | – | 7.0 |
| 50 to 99 lb | 13.0 | .8 | 36.8 | .1 | S | S | 15.3 |
| 100 to 499 lb | 7.8 | .8 | 12.9 | .1 | 9.5 | – | 8.3 |
| 500 to 749 lb | 11.3 | .2 | 13.0 | – | 7.5 | – | 12.2 |
| 750 to 999 lb | 11.5 | .2 | 21.0 | – | 5.4 | – | 21.5 |
| 1,000 to 9,999 lb | 7.9 | 1.2 | 15.4 | .6 | 7.3 | .5 | 17.3 |
| 10,000 to 49,999 lb | 9.4 | 2.7 | 16.7 | 4.9 | 13.2 | 6.7 | 8.4 |
| 50,000 to 99,999 lb | 16.9 | .7 | 23.7 | 3.9 | 42.9 | 3.2 | 16.5 |
| 100,000 lb or more | 14.5 | .4 | 24.0 | 4.4 | 20.1 | 6.9 | 10.8 |
| **Single modes** | **5.4** | **–** | **10.7** | **–** | **10.0** | **–** | **13.9** |
| Less than 50 lb | 11.8 | .5 | 14.3 | – | 23.1 | – | 35.0 |
| 50 to 99 lb | 21.4 | .8 | 13.3 | – | 25.4 | – | 22.9 |
| 100 to 499 lb | 11.2 | 1.1 | 15.2 | .1 | 13.9 | – | 7.5 |
| 500 to 749 lb | 12.7 | .3 | 14.0 | – | 8.2 | – | 11.7 |
| 750 to 999 lb | 10.4 | .2 | 22.8 | – | 8.0 | – | 19.3 |
| 1,000 to 9,999 lb | 9.0 | 1.4 | 15.8 | .6 | 6.5 | .4 | 17.3 |
| 10,000 to 49,999 lb | 10.0 | 3.3 | 16.8 | 5.1 | 12.9 | 6.8 | 8.5 |
| 50,000 to 99,999 lb | 16.9 | .9 | 23.8 | 3.9 | 43.0 | 3.3 | 16.5 |
| 100,000 lb or more | 14.0 | .4 | 25.1 | 4.5 | 19.7 | 6.8 | 9.6 |
| **Truck[2]** | **4.3** | **–** | **13.4** | **–** | **14.5** | **–** | **12.3** |
| Less than 50 lb | 13.5 | .6 | 15.7 | – | 25.9 | – | 24.6 |
| 50 to 99 lb | 22.2 | .9 | 13.0 | – | 25.0 | – | 25.8 |
| 100 to 499 lb | 11.5 | 1.2 | 15.2 | .1 | 14.2 | .2 | 8.5 |
| 500 to 749 lb | 12.5 | .3 | 13.9 | – | 7.5 | – | 12.7 |
| 750 to 999 lb | 10.9 | .2 | 22.9 | .1 | 8.5 | – | 19.2 |
| 1,000 to 9,999 lb | 8.7 | 1.5 | 15.9 | 1.0 | 6.0 | .9 | 17.2 |
| 10,000 to 49,999 lb | 7.0 | 2.6 | 17.1 | 4.5 | 13.8 | 5.0 | 8.8 |
| 50,000 to 99,999 lb | 14.0 | .7 | 24.0 | 4.6 | 44.9 | 5.0 | 17.3 |
| 100,000 lb or more | 34.5 | .2 | 32.5 | .8 | 38.8 | .9 | S |
| **For-hire truck** | **6.9** | **–** | **14.2** | **–** | **15.6** | **–** | **9.3** |
| Less than 50 lb | 27.3 | 1.3 | 30.0 | – | 33.2 | – | 13.2 |
| 50 to 99 lb | 37.6 | 1.2 | 25.5 | – | 38.1 | – | 14.8 |
| 100 to 499 lb | 14.5 | 1.3 | 14.2 | – | 15.8 | .2 | 8.2 |
| 500 to 749 lb | 7.4 | .4 | 13.8 | – | 8.5 | – | 10.3 |
| 750 to 999 lb | 15.6 | .3 | 9.5 | – | 11.2 | – | 14.5 |
| 1,000 to 9,999 lb | 8.1 | 1.0 | 7.6 | .4 | 7.5 | 1.0 | 7.0 |
| 10,000 to 49,999 lb | 9.6 | 3.1 | 14.0 | 5.5 | 15.4 | 5.4 | 5.9 |
| 50,000 to 99,999 lb | 19.7 | .7 | 31.0 | 5.6 | 48.0 | 6.1 | 19.3 |
| 100,000 lb or more | 36.0 | .1 | 29.1 | 1.1 | S | S | 45.6 |
| **Private truck** | **11.4** | **–** | **20.1** | **–** | **22.8** | **–** | **22.9** |
| Less than 50 lb | 22.0 | 1.4 | 22.0 | – | 42.8 | .2 | 37.5 |
| 50 to 99 lb | 18.5 | .5 | 18.3 | – | 26.8 | – | 29.6 |
| 100 to 499 lb | 14.1 | 1.8 | 16.6 | .3 | 22.2 | .3 | 17.2 |
| 500 to 749 lb | 25.5 | .6 | 16.9 | .2 | 21.1 | .1 | 25.6 |
| 750 to 999 lb | 18.1 | .3 | 27.9 | .4 | 14.3 | .2 | 15.1 |
| 1,000 to 9,999 lb | 13.9 | 3.0 | 19.6 | 3.3 | 13.8 | 2.1 | 23.7 |
| 10,000 to 49,999 lb | 16.8 | 3.5 | 29.7 | 5.4 | 25.7 | 5.9 | 12.2 |
| 50,000 to 99,999 lb | 27.2 | .9 | 19.4 | 4.7 | 40.1 | 3.0 | 15.4 |
| 100,000 lb or more | 45.3 | .5 | 49.9 | 1.1 | 45.8 | 2.9 | S |
| **Rail** | **39.1** | **–** | **17.3** | **–** | **17.7** | **–** | **8.8** |
| 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 | S | S | S | S | S | S | 21.0 |
| 10,000 to 49,999 lb | S | S | 42.8 | 4.3 | 35.6 | 6.2 | 12.5 |
| 50,000 to 99,999 lb | S | S | S | S | 48.2 | .6 | 33.2 |
| 100,000 lb or more | 19.6 | 13.0 | 19.3 | 4.3 | 21.3 | 6.2 | 9.0 |
| **Water** | **33.8** | **–** | **S** | **S** | **35.9** | **–** | **S** |
| 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 | S | S | S | S | S | S | 27.9 |
| 100,000 lb or more | 33.7 | 3.0 | S | S | 36.1 | 1.2 | S |
| **Shallow draft** | **33.8** | **–** | **S** | **S** | **35.9** | **–** | **S** |
| 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 | S | S | S | S | S | S | 27.9 |
| 100,000 lb or more | 33.7 | 3.0 | S | S | 36.1 | 1.2 | S |

See footnote at end of table.

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

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

| Mode of transportation and shipment weight | Value | | Tons | | Ton-miles | | Average miles per shipment—coefficient of variation |
|---|---|---|---|---|---|---|---|
| | Coefficient of variation of number | Standard error of percentage | Coefficient of variation of number | Standard error of percentage | Coefficient of variation of number | Standard error of percentage | |
| **Single modes**—Con. | | | | | | | |
| **Great Lakes** | **–** | **–** | **–** | **–** | **–** | **–** | **–** |
| Less than 50 lb | – | – | – | – | – | – | – |
| 50 to 99 lb | – | – | – | – | – | – | – |
| 100 to 499 lb | – | – | – | – | – | – | – |
| 500 to 749 lb | – | – | – | – | – | – | – |
| 750 to 999 lb | – | – | – | – | – | – | – |
| 1,000 to 9,999 lb | – | – | – | – | – | – | – |
| 10,000 to 49,999 lb | – | – | – | – | – | – | – |
| 50,000 to 99,999 lb | – | – | – | – | – | – | – |
| 100,000 lb or more | – | – | – | – | – | – | – |
| **Deep draft** | **–** | **–** | **–** | **–** | **–** | **–** | **–** |
| 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 | – | – | – | – | – | – | – |
| **Air (includes truck and air)** | **28.7** | **–** | **29.3** | **–** | **34.9** | **–** | **5.7** |
| Less than 50 lb | 41.3 | 9.3 | S | S | S | S | 5.5 |
| 50 to 99 lb | 37.7 | 3.3 | S | S | S | S | 15.3 |
| 100 to 499 lb | 30.8 | 8.6 | 35.6 | 5.8 | 36.0 | 4.5 | 7.9 |
| 500 to 749 lb | S | S | S | S | S | S | 25.3 |
| 750 to 999 lb | S | S | S | S | S | S | 30.0 |
| 1,000 to 9,999 lb | 43.1 | 3.8 | S | S | S | S | 19.8 |
| 10,000 to 49,999 lb | S | S | S | S | S | S | 29.8 |
| 50,000 to 99,999 lb | S | S | S | S | S | S | 31.6 |
| 100,000 lb or more | – | – | – | – | – | – | – |
| **Pipeline**[3] | **S** | **S** | **S** | **S** | **S** | **S** | **S** |
| Less than 50 lb | – | – | – | – | S | S | S |
| 50 to 99 lb | – | – | – | – | S | S | S |
| 100 to 499 lb | – | – | – | – | 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 |
| 10,000 to 49,999 lb | – | – | – | – | S | S | S |
| 50,000 to 99,999 lb | – | – | – | – | S | S | S |
| 100,000 lb or more | S | S | S | S | S | S | S |
| **Multiple modes** | **6.3** | **–** | **48.5** | **–** | **34.2** | **–** | **4.8** |
| Less than 50 lb | 9.4 | 2.5 | 16.2 | 5.1 | 20.0 | 3.7 | 4.5 |
| 50 to 99 lb | 22.2 | 3.2 | S | S | S | S | 11.2 |
| 100 to 499 lb | 11.0 | 1.9 | 13.6 | 4.1 | 15.6 | 2.4 | 7.7 |
| 500 to 749 lb | 22.4 | .3 | 31.7 | 1.1 | 30.6 | .5 | 27.0 |
| 750 to 999 lb | S | S | S | S | S | S | 29.7 |
| 1,000 to 9,999 lb | S | S | S | S | S | S | 26.6 |
| 10,000 to 49,999 lb | 26.0 | 2.4 | 35.2 | 9.4 | 35.9 | 10.5 | 20.7 |
| 50,000 to 99,999 lb | S | S | S | S | S | S | 31.6 |
| 100,000 lb or more | S | S | S | S | S | S | 28.3 |
| **Parcel, U.S. Postal Service or courier** | **8.3** | **–** | **22.4** | **–** | **31.3** | **–** | **4.8** |
| Less than 50 lb | 9.5 | 2.0 | 16.2 | 4.2 | 20.0 | 5.8 | 4.5 |
| 50 to 99 lb | 22.2 | 3.1 | S | S | S | S | 11.2 |
| 100 to 499 lb | 11.0 | 2.0 | 13.4 | 5.1 | 15.7 | 5.3 | 7.7 |
| 500 to 749 lb | 22.4 | .3 | 33.7 | 1.2 | 30.6 | 1.0 | 27.2 |
| 750 to 999 lb | S | S | S | S | S | S | 22.0 |
| 1,000 to 9,999 lb | S | S | S | S | S | S | 29.8 |
| 10,000 to 49,999 lb | – | – | – | – | – | – | – |
| 50,000 to 99,999 lb | – | – | – | – | – | – | – |
| 100,000 lb or more | – | – | – | – | – | – | – |
| **Truck and rail** | **32.2** | **–** | **40.3** | **–** | **36.9** | **–** | **15.6** |
| Less than 50 lb | S | S | S | S | S | S | 31.6 |
| 50 to 99 lb | S | S | S | S | S | S | 31.6 |
| 100 to 499 lb | S | S | S | S | S | S | 31.6 |
| 500 to 749 lb | – | – | – | – | – | – | – |
| 750 to 999 lb | S | S | S | S | S | S | 31.6 |
| 1,000 to 9,999 lb | S | S | S | S | S | S | 29.8 |
| 10,000 to 49,999 lb | 30.8 | 10.2 | 37.8 | 12.1 | 41.3 | 11.0 | 17.9 |
| 50,000 to 99,999 lb | S | S | S | S | S | S | 31.6 |
| 100,000 lb or more | S | S | S | S | S | S | 31.6 |
| **Truck and water** | **S** | **S** | **S** | **S** | **S** | **S** | **30.6** |
| Less than 50 lb | S | S | S | S | S | S | 31.6 |
| 50 to 99 lb | S | S | S | S | S | S | 31.6 |
| 100 to 499 lb | S | S | S | S | S | S | 37.4 |
| 500 to 749 lb | – | – | – | – | – | – | – |
| 750 to 999 lb | S | S | S | S | S | S | 31.8 |
| 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 | – | – | – | – | – | – | – |
| 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** | **48.8** | **–** | **S** | **S** | **S** | **S** | **27.2** |
| Less than 50 lb | – | – | – | – | – | – | – |
| 50 to 99 lb | – | – | – | – | – | – | – |
| 100 to 499 lb | – | – | – | – | – | – | – |
| 500 to 749 lb | – | – | – | – | – | – | – |
| 750 to 999 lb | – | – | – | – | – | – | – |
| 1,000 to 9,999 lb | – | – | – | – | – | – | – |
| 10,000 to 49,999 lb | S | S | S | S | S | S | 27.9 |
| 50,000 to 99,999 lb | – | – | – | – | – | – | – |
| 100,000 lb or more | S | S | S | S | S | S | 30.6 |
| **Other multiple modes** | **S** | **S** | **S** | **S** | **S** | **S** | **S** |
| Less than 50 lb | S | S | S | S | S | S | 31.6 |
| 50 to 99 lb | S | S | S | S | S | S | 31.6 |
| 100 to 499 lb | S | S | S | S | S | S | 31.6 |
| 500 to 749 lb | S | S | S | S | S | S | 31.6 |
| 750 to 999 lb | – | – | – | – | – | – | – |
| 1,000 to 9,999 lb | – | – | – | – | – | – | – |
| 10,000 to 49,999 lb | S | S | S | S | S | S | 37.8 |
| 50,000 to 99,999 lb | S | S | S | S | S | S | 31.6 |
| 100,000 lb or more | S | S | S | S | S | S | 31.6 |
| **Other and unknown modes** | **26.8** | **–** | **40.3** | **–** | **46.0** | **–** | **34.1** |
| Less than 50 lb | 43.6 | 5.1 | 36.7 | 1.2 | S | S | 38.3 |
| 50 to 99 lb | 43.1 | 3.2 | 42.3 | 1.0 | S | S | 29.9 |
| 100 to 499 lb | 37.4 | 2.4 | 32.5 | 2.8 | 43.6 | 2.3 | 24.1 |
| 500 to 749 lb | 42.4 | .8 | 43.0 | 1.0 | 42.7 | .1 | S |
| 750 to 999 lb | 44.3 | .6 | 31.9 | .4 | S | S | 34.6 |
| 1,000 to 9,999 lb | 37.3 | 4.9 | 26.9 | 5.4 | S | S | 17.9 |
| 10,000 to 49,999 lb | 30.5 | 6.7 | 31.0 | 9.4 | S | S | 21.8 |
| 50,000 to 99,999 lb | S | S | 47.4 | 3.6 | 49.1 | 1.3 | 25.6 |
| 100,000 lb or more | S | S | S | S | S | S | S |

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

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

# Table B–5a. Estimated Measures of Reliability for Shipment Characteristics by Two-Digit Commodity for State of Origin: 2002

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

| SCTG code | Commodity description | Value | | Tons | | Ton-miles | | Average miles per shipment—coefficient of variation |
|---|---|---|---|---|---|---|---|---|
| | | Coefficient of variation of number | Standard error of percentage | Coefficient of variation of number | Standard error of percentage | Coefficient of variation of number | Standard error of percentage | |
| | **Total** | **4.5** | **–** | **10.2** | **–** | **9.8** | **–** | **8.6** |
| 01 | Live animals and live fish | S | S | S | S | S | S | S |
| 02 | Cereal grains | 32.2 | .4 | 30.6 | 2.6 | 25.4 | 4.2 | 38.8 |
| 03 | Other agricultural products | 34.4 | .5 | 34.9 | 1.5 | 43.3 | 1.9 | S |
| 04 | Animal feed and products of animal origin, n.e.c. | 32.4 | .3 | S | S | S | S | S |
| 05 | Meat, fish, seafood, and their preparations | S | S | S | S | S | S | 36.6 |
| 06 | Milled grain products and preparations, and bakery products | S | S | 26.8 | .9 | 33.1 | 1.8 | 41.2 |
| 07 | Other prepared foodstuffs and fats and oils | 18.5 | .9 | 29.6 | 1.3 | 26.5 | 2.2 | S |
| 08 | Alcoholic beverages | 44.4 | .6 | 41.9 | .5 | S | S | 40.8 |
| 09 | Tobacco products | S | S | S | S | S | S | 29.9 |
| 10 | Monumental or building stone | – | – | – | – | – | – | – |
| 11 | Natural sands | 43.2 | – | S | S | S | S | 42.2 |
| 12 | Gravel and crushed stone | 18.0 | – | 21.2 | 3.8 | 30.8 | 4.4 | 15.4 |
| 13 | Nonmetallic minerals n.e.c. | S | S | S | S | S | S | S |
| 14 | Metallic ores and concentrates | 32.6 | – | 32.0 | – | 34.6 | – | 45.6 |
| 15 | Coal | – | – | – | – | – | – | – |
| 17 | Gasoline and aviation turbine fuel | 27.6 | .3 | 25.9 | 1.1 | 36.3 | .1 | 23.6 |
| 18 | Fuel oils | 33.7 | .2 | 29.2 | .8 | 46.2 | .1 | 16.2 |
| 19 | Coal and petroleum products, n.e.c. | 38.6 | .2 | S | S | 40.1 | .1 | S |
| 20 | Basic chemicals | 23.3 | .4 | S | S | S | S | 19.8 |
| 21 | Pharmaceutical products | 17.5 | 1.6 | 36.1 | .1 | 40.8 | .2 | 41.9 |
| 22 | Fertilizers | 48.8 | – | S | S | 36.7 | .1 | S |
| 23 | Chemical products and preparations, n.e.c. | 17.0 | .6 | 36.7 | .6 | 36.0 | .7 | S |
| 24 | Plastics and rubber | 34.2 | 1.0 | 33.8 | .2 | 47.4 | .4 | 33.1 |
| 25 | Logs and other wood in the rough | 44.7 | – | 33.5 | – | S | S | 34.4 |
| 26 | Wood products | 14.4 | .1 | 30.4 | .6 | 45.0 | .4 | 31.8 |
| 27 | Pulp, newsprint, paper, and paperboard | 41.5 | .1 | S | S | S | S | 21.9 |
| 28 | Paper or paperboard articles | 28.9 | .4 | 24.6 | .2 | 31.2 | .4 | 24.1 |
| 29 | Printed products | 21.1 | .8 | 26.9 | .1 | 37.4 | .4 | 5.8 |
| 30 | Textiles, leather, and articles of textiles or leather | 14.3 | .4 | 11.5 | – | 14.8 | .1 | 6.8 |
| 31 | Nonmetallic mineral products | 41.1 | .8 | 22.7 | 1.2 | 29.0 | 1.8 | 25.6 |
| 32 | Base metal in primary or semifinished forms and in finished basic shapes | 16.3 | .4 | 17.9 | .3 | 15.9 | .3 | 31.9 |
| 33 | Articles of base metal | 17.9 | .7 | 33.5 | .5 | 49.2 | .9 | 50.0 |
| 34 | Machinery | 26.0 | 1.9 | 42.8 | .4 | 49.0 | .9 | 16.3 |
| 35 | Electronic and other electrical equipment and components and office equipment | 13.7 | 1.0 | 9.4 | – | 13.5 | .1 | 13.1 |
| 36 | Motorized and other vehicles (including parts) | 31.8 | 3.4 | 21.4 | .3 | 24.4 | .8 | 13.1 |
| 37 | Transportation equipment, n.e.c. | S | S | S | S | S | S | 22.2 |
| 38 | Precision instruments and apparatus | 34.5 | .2 | S | S | 45.0 | – | 30.2 |
| 39 | Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs | 29.1 | .5 | 27.4 | – | 28.1 | .2 | 18.4 |
| 40 | Miscellaneous manufactured products | 28.1 | 2.5 | 21.9 | .4 | 28.4 | .7 | 7.9 |
| 41 | Waste and scrap | 36.8 | .6 | 42.1 | 3.3 | 42.5 | 4.6 | 18.4 |
| 43 | Mixed freight | 31.7 | 2.6 | 12.2 | .4 | 9.4 | .3 | 18.7 |
| -- | Commodity unknown | 38.6 | – | 29.5 | – | 40.2 | – | 24.4 |

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

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

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

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

| SCTG code | Commodity description | Value (percent) | | Tons (percent) | | Ton-miles[1] (percent) | |
|---|---|---|---|---|---|---|---|
| | | 2002 | 1997 | 2002 | 1997 | 2002 | 1997 |
| | **Total** | – | – | – | – | – | – |
| 01 | Live animals and live fish | S | S | S | S | S | S |
| 02 | Cereal grains | .4 | .4 | 2.6 | 1.5 | 4.2 | 2.8 |
| 03 | Other agricultural products | .5 | .4 | 1.5 | .9 | 1.9 | 1.5 |
| 04 | Animal feed and products of animal origin, n.e.c | .3 | .5 | S | 1.7 | S | .9 |
| 05 | Meat, fish, seafood, and their preparations | S | .7 | S | .3 | S | .6 |
| 06 | Milled grain products and preparations, and bakery products | S | .3 | .9 | .7 | 1.8 | 1.4 |
| 07 | Other prepared foodstuffs and fats and oils | .9 | .6 | 1.3 | .8 | 2.2 | 1.0 |
| 08 | Alcoholic beverages | .6 | .4 | .5 | .6 | S | .9 |
| 09 | Tobacco products | S | – | S | – | S | – |
| 10 | Monumental or building stone | – | S | – | S | – | S |
| 11 | Natural sands | – | – | S | .6 | S | .3 |
| 12 | Gravel and crushed stone | – | – | 3.8 | 3.7 | 4.4 | 4.0 |
| 13 | Nonmetallic minerals n.e.c. | S | S | S | S | S | – |
| 14 | Metallic ores and concentrates | – | – | – | .2 | – | – |
| 15 | Coal | – | – | – | S | – | – |
| 17 | Gasoline and aviation turbine fuel | .3 | .4 | 1.1 | .8 | .1 | .2 |
| 18 | Fuel oils | .2 | .2 | .8 | .7 | .1 | .1 |
| 19 | Coal and petroleum products, n.e.c. | .2 | .2 | S | S | .1 | S |
| 20 | Basic chemicals | .4 | .2 | S | .6 | S | S |
| 21 | Pharmaceutical products | 1.6 | .5 | .1 | .1 | .2 | S |
| 22 | Fertilizers | – | .1 | S | .5 | .1 | .4 |
| 23 | Chemical products and preparations, n.e.c. | .6 | .7 | .6 | .3 | .7 | 1.0 |
| 24 | Plastics and rubber | 1.0 | .4 | .2 | .4 | .4 | S |
| 25 | Logs and other wood in the rough | – | – | – | – | S | S |
| 26 | Wood products | .1 | .1 | .6 | .2 | .4 | .1 |
| 27 | Pulp, newsprint, paper, and paperboard | .1 | .1 | S | .1 | S | – |
| 28 | Paper or paperboard articles | .4 | .5 | .2 | .1 | .4 | .3 |
| 29 | Printed products | .8 | 1.0 | .1 | .2 | .4 | .6 |
| 30 | Textiles, leather, and articles of textiles or leather | .4 | .4 | – | – | .1 | – |
| 31 | Nonmetallic mineral products | .8 | .3 | 1.2 | 2.2 | 1.8 | 1.2 |
| 32 | Base metal in primary or semifinished forms and in finished basic shapes | .4 | .3 | .3 | .4 | .3 | 1.2 |
| 33 | Articles of base metal | .7 | .4 | .5 | .1 | .9 | .3 |
| 34 | Machinery | 1.9 | .4 | .4 | – | .9 | .2 |
| 35 | Electronic and other electrical equipment and components and office equipment | 1.0 | 1.0 | – | – | .1 | .3 |
| 36 | Motorized and other vehicles (including parts) | 3.4 | 4.0 | .3 | .5 | .8 | 1.9 |
| 37 | Transportation equipment, n.e.c. | S | .3 | S | – | S | – |
| 38 | Precision instruments and apparatus | .2 | .2 | S | – | – | S |
| 39 | Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs | .5 | .3 | – | .2 | .2 | .3 |
| 40 | Miscellaneous manufactured products | 2.5 | 2.0 | .4 | .2 | .7 | .4 |
| 41 | Waste and scrap | .6 | .2 | 3.3 | .7 | 4.6 | .8 |
| 43 | Mixed freight | 2.6 | .3 | .4 | .1 | .3 | .1 |
| -- | Commodity unknown | – | .4 | – | .1 | – | – |

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

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

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

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

| SCTG code, description, and mode of transportation | Value | | Tons | | Ton-miles | | Average miles per shipment—coefficient of variation |
|---|---|---|---|---|---|---|---|
| | Coefficient of variation of number | Standard error of percentage | Coefficient of variation of number | Standard error of percentage | Coefficient of variation of number | Standard error of percentage | |
| **ALL COMMODITIES** | | | | | | | |
| **Total** | **4.5** | **–** | **10.2** | **–** | **9.8** | **–** | **8.6** |
| **Single modes** | **5.4** | **1.1** | **10.7** | **1.2** | **10.0** | **1.9** | **13.9** |
| Truck | 4.3 | 2.9 | 13.4 | 4.5 | 14.5 | 6.2 | 12.3 |
| For-hire truck | 6.9 | 3.4 | 14.2 | 2.9 | 15.6 | 4.5 | 9.3 |
| Private truck | 11.4 | 3.2 | 20.1 | 4.2 | 22.8 | 3.0 | 22.9 |
| Rail | 39.1 | 3.4 | 17.3 | 3.1 | 17.7 | 5.0 | 8.8 |
| Water | 33.8 | .2 | S | S | 35.9 | 5.3 | S |
| Shallow draft | 33.8 | .2 | S | S | 35.9 | 5.3 | S |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | 28.7 | .3 | 29.3 | – | 34.9 | – | 5.7 |
| Pipeline | S | S | S | S | S | S | S |
| **Multiple modes** | **6.3** | **1.0** | **48.5** | **1.1** | **34.2** | **2.0** | **4.8** |
| Parcel, U.S. Postal Service or courier | 8.3 | 1.0 | 22.4 | .1 | 31.3 | .4 | 4.8 |
| Truck and rail | 32.2 | .3 | 40.3 | .2 | 36.9 | 1.1 | 15.6 |
| Truck and water | S | S | S | S | S | S | 30.6 |
| Rail and water | 48.8 | .1 | S | S | S | S | 27.2 |
| Other multiple modes | S | S | S | S | S | S | S |
| **Other and unknown modes** | **26.8** | **.6** | **40.3** | **.6** | **46.0** | **.6** | **34.1** |
| **SCTG 01, LIVE ANIMALS AND LIVE FISH** | | | | | | | |
| **Total** | **S** | **S** | **S** | **S** | **S** | **S** | **S** |
| **Single modes** | **S** | **S** | **S** | **S** | **S** | **S** | **S** |
| Truck | S | S | S | S | S | S | S |
| For-hire truck | S | S | S | S | S | S | 29.8 |
| Private truck | S | S | S | S | S | S | 31.6 |
| Rail | – | – | – | – | – | – | – |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | – | – | – | – | – | – | – |
| Pipeline | – | – | – | – | S | S | S |
| **Multiple modes** | **–** | **–** | **–** | **–** | **–** | **–** | **–** |
| Parcel, U.S. Postal Service or courier | – | – | – | – | – | – | – |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **–** | **–** | **–** | **–** | **–** | **–** | **–** |
| **SCTG 02, CEREAL GRAINS** | | | | | | | |
| **Total** | **32.2** | **–** | **30.6** | **–** | **25.4** | **–** | **38.8** |
| **Single modes** | **32.7** | **1.6** | **31.1** | **1.5** | **25.2** | **2.2** | **38.3** |
| Truck | 48.1 | 10.1 | 49.0 | 10.9 | S | S | 25.6 |
| For-hire truck | 50.0 | 11.9 | S | S | S | S | 23.3 |
| Private truck | S | S | S | S | S | S | 29.0 |
| Rail | 45.4 | 8.5 | 42.6 | 9.3 | 39.5 | 10.7 | 15.3 |
| Water | 44.3 | 9.3 | 45.8 | 9.9 | 45.4 | 10.9 | 18.7 |
| Shallow draft | 44.3 | 9.3 | 45.8 | 9.9 | 45.4 | 10.9 | 18.7 |
| 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 03, OTHER AGRICULTURAL PRODUCTS** | | | | | | | |
| **Total** | **34.4** | **–** | **34.9** | **–** | **43.3** | **–** | **S** |
| **Single modes** | **34.2** | **.2** | **34.9** | **–** | **43.3** | **–** | **S** |
| Truck | 36.0 | 10.9 | S | S | 39.5 | 19.0 | S |
| For-hire truck | 49.6 | 10.8 | 40.4 | 10.9 | 49.3 | 9.9 | 27.9 |
| Private truck | S | S | S | S | S | S | S |
| Rail | S | S | S | S | S | S | 30.0 |
| Water | S | S | S | S | S | S | 24.8 |
| Shallow draft | S | S | S | S | S | S | 24.8 |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | S | S | S | S | S | S | 31.6 |
| Pipeline | – | – | – | – | S | S | S |
| **Multiple modes** | **S** | **S** | **S** | **S** | **S** | **S** | **31.6** |
| Parcel, U.S. Postal Service or courier | – | – | – | – | – | – | – |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | S | S | S | S | S | S | 31.6 |
| **Other and unknown modes** | **–** | **–** | **–** | **–** | **–** | **–** | **–** |
| **SCTG 04, ANIMAL FEED AND PRODUCTS OF ANIMAL ORIGIN, N.E.C.** | | | | | | | |
| **Total** | **32.4** | **–** | **S** | **S** | **S** | **S** | **S** |
| **Single modes** | **32.4** | **.9** | **S** | **S** | **S** | **S** | **S** |
| Truck | 35.0 | 5.7 | S | S | S | S | S |
| For-hire truck | 32.8 | 12.7 | S | S | S | S | S |
| Private truck | S | S | S | S | S | S | S |
| Rail | 48.4 | 5.9 | 47.7 | 5.4 | S | S | 24.0 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | – | – | – | – | – | – | – |
| Pipeline | – | – | – | – | S | S | S |
| **Multiple modes** | **S** | **S** | **S** | **S** | **S** | **S** | **S** |
| 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 | S | S | S | S | S | S | 31.6 |
| **Other and unknown modes** | **S** | **S** | **49.6** | **5.8** | **S** | **S** | **30.7** |
| **SCTG 05, MEAT, FISH, SEAFOOD, AND THEIR PREPARATIONS** | | | | | | | |
| **Total** | **S** | **S** | **S** | **S** | **S** | **S** | **36.6** |
| **Single modes** | **S** | **S** | **S** | **S** | **S** | **S** | **37.5** |
| Truck | S | S | S | S | S | S | 37.5 |
| For-hire truck | S | S | S | S | S | S | 6.3 |
| Private truck | S | S | S | S | S | S | S |
| Rail | – | – | – | – | – | – | – |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | – | – | – | – | – | – | – |
| Pipeline | – | – | – | – | S | S | S |
| **Multiple modes** | **S** | **S** | **S** | **S** | **S** | **S** | **35.3** |
| Parcel, U.S. Postal Service or courier | S | S | S | S | S | S | 35.3 |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **38.4** |

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 06, MILLED GRAIN PRODUCTS AND PREPARATIONS, AND BAKERY PRODUCTS** | | | | | | | |
| **Total** | **S** | **S** | **26.8** | **–** | **33.1** | **–** | **41.2** |
| **Single modes** | **S** | **S** | **26.9** | **.2** | **33.2** | **.4** | **40.8** |
| Truck | S | S | 24.9 | 5.1 | 28.3 | 7.9 | 42.9 |
| For-hire truck | S | S | 27.1 | 9.5 | 28.6 | 10.2 | 14.0 |
| Private truck | 46.4 | 9.1 | 36.2 | 8.8 | 39.8 | 9.4 | S |
| Rail | S | S | S | S | S | S | 18.9 |
| Water | S | S | S | S | S | S | 31.6 |
| Shallow draft | S | S | S | S | S | S | 31.6 |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | S | S | S | S | S | S | 31.6 |
| Pipeline | – | – | – | – | S | S | S |
| **Multiple modes** | **S** | **S** | **S** | **S** | **S** | **S** | **44.5** |
| Parcel, U.S. Postal Service or courier | S | S | S | S | S | S | 44.5 |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **S** |
| **SCTG 07, OTHER PREPARED FOODSTUFFS AND FATS AND OILS** | | | | | | | |
| **Total** | **18.5** | **–** | **29.6** | **–** | **26.5** | **–** | **S** |
| **Single modes** | **18.9** | **1.6** | **31.1** | **3.4** | **28.1** | **3.9** | **S** |
| Truck | 20.0 | 2.5 | 35.8 | 7.1 | 34.7 | 8.6 | S |
| For-hire truck | 19.9 | 5.2 | 29.8 | 6.5 | 29.6 | 7.9 | 10.8 |
| Private truck | 25.6 | 5.6 | S | S | S | S | S |
| Rail | 26.3 | 2.1 | 27.3 | 6.4 | 25.4 | 8.2 | 22.4 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | S | S | S | S | S | S | 31.6 |
| Pipeline | – | – | – | – | S | S | S |
| **Multiple modes** | **S** | **S** | **S** | **S** | **S** | **S** | **27.1** |
| Parcel, U.S. Postal Service or courier | S | S | 48.4 | – | 35.8 | – | 27.6 |
| 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** |
| **SCTG 08, ALCOHOLIC BEVERAGES** | | | | | | | |
| **Total** | **44.4** | **–** | **41.9** | **–** | **S** | **S** | **40.8** |
| **Single modes** | **44.4** | **–** | **41.9** | **–** | **S** | **S** | **40.8** |
| Truck | 44.9 | 2.4 | 41.8 | 2.8 | S | S | 39.2 |
| For-hire truck | S | S | S | S | S | S | 28.5 |
| Private truck | S | S | S | S | S | S | 27.8 |
| Rail | S | S | S | S | S | S | 29.9 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | – | – | – | – | – | – | – |
| Pipeline | – | – | – | – | S | S | S |
| **Multiple modes** | **–** | **–** | **–** | **–** | **–** | **–** | **–** |
| Parcel, U.S. Postal Service or courier | – | – | – | – | – | – | – |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **–** | **–** | **–** | **–** | **–** | **–** | **–** |

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** | **29.9** |
| **Single modes** | **S** | **S** | **S** | **S** | **S** | **S** | **29.9** |
| Truck | S | S | S | S | S | S | 29.9 |
| For-hire truck | – | – | – | – | – | – | – |
| Private truck | S | S | S | S | S | S | 29.9 |
| Rail | – | – | – | – | – | – | – |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | – | – | – | – | – | – | – |
| Pipeline | – | – | – | – | S | S | S |
| **Multiple modes** | **–** | **–** | **–** | **–** | **–** | **–** | **–** |
| 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** | **–** | **–** | **–** | **–** | **–** | **–** | **–** |
| **Single modes** | **–** | **–** | **–** | **–** | **–** | **–** | **–** |
| Truck | – | – | – | – | – | – | – |
| For-hire truck | – | – | – | – | – | – | – |
| Private truck | – | – | – | – | – | – | – |
| Rail | – | – | – | – | – | – | – |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | – | – | – | – | – | – | – |
| Pipeline | – | – | – | – | S | S | S |
| **Multiple modes** | **–** | **–** | **–** | **–** | **–** | **–** | **–** |
| Parcel, U.S. Postal Service or courier | – | – | – | – | – | – | – |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **–** | **–** | **–** | **–** | **–** | **–** | **–** |
| **SCTG 11, NATURAL SANDS** | | | | | | | |
| **Total** | **43.2** | **–** | **S** | **S** | **S** | **S** | **42.2** |
| **Single modes** | **43.5** | **1.2** | **S** | **S** | **S** | **S** | **42.6** |
| Truck | S | S | S | S | S | S | S |
| For-hire truck | S | S | S | S | S | S | S |
| Private truck | S | S | S | S | S | S | 24.9 |
| Rail | 46.5 | 1.7 | 47.0 | 2.7 | S | S | 26.5 |
| 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) | – | – | – | – | – | – | – |
| Pipeline | – | – | – | – | S | S | S |
| **Multiple modes** | **–** | **–** | **–** | **–** | **–** | **–** | **–** |
| Parcel, U.S. Postal Service or courier | – | – | – | – | – | – | – |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **29.8** |

See footnote at end of table.

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

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

| SCTG code, description, and mode of transportation | Value | | Tons | | Ton-miles | | Average miles per shipment—coefficient of variation |
|---|---|---|---|---|---|---|---|
| | Coefficient of variation of number | Standard error of percentage | Coefficient of variation of number | Standard error of percentage | Coefficient of variation of number | Standard error of percentage | |
| **SCTG 12, GRAVEL AND CRUSHED STONE** | | | | | | | |
| **Total** | **18.0** | **–** | **21.2** | **–** | **30.8** | **–** | **15.4** |
| **Single modes** | **18.5** | **2.3** | **21.8** | **2.8** | **27.4** | **5.8** | **15.0** |
| Truck | 22.8 | 7.8 | 27.5 | 8.3 | 37.0 | 17.9 | 15.1 |
| For-hire truck | 17.1 | 4.8 | 19.0 | 5.0 | 30.1 | 5.8 | 20.8 |
| Private truck | 32.4 | 5.5 | 38.5 | 6.6 | 44.3 | 10.0 | 17.3 |
| Rail | 38.9 | 5.6 | 46.1 | 4.1 | 47.0 | 10.6 | 24.3 |
| Water | 45.0 | 2.9 | 45.4 | 4.6 | 46.5 | 11.4 | 26.3 |
| Shallow draft | 45.0 | 2.9 | 45.4 | 4.6 | 46.5 | 11.4 | 26.3 |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | – | – | – | – | – | – | – |
| Pipeline | – | – | – | – | S | S | S |
| **Multiple modes** | **S** | **S** | **S** | **S** | **S** | **S** | **30.1** |
| Parcel, U.S. Postal Service or courier | – | – | – | – | – | – | – |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | S | S | S | S | S | S | 30.6 |
| Other multiple modes | S | S | S | S | S | S | 31.7 |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **40.9** |
| **SCTG 13, NONMETALLIC MINERALS N.E.C.** | | | | | | | |
| **Total** | **S** | **S** | **S** | **S** | **S** | **S** | **S** |
| **Single modes** | **S** | **S** | **S** | **S** | **S** | **S** | **S** |
| Truck | S | S | S | S | S | S | S |
| For-hire truck | S | S | S | S | S | S | 28.0 |
| Private truck | S | S | S | S | S | S | 34.5 |
| Rail | S | S | S | S | S | S | 31.6 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | – | – | – | – | – | – | – |
| Pipeline | – | – | – | – | S | S | S |
| **Multiple modes** | **48.9** | **3.5** | **44.3** | **.7** | **48.0** | **.6** | **24.1** |
| Parcel, U.S. Postal Service or courier | 48.9 | 3.5 | 44.3 | .7 | 48.0 | .6 | 24.1 |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **S** |
| **SCTG 14, METALLIC ORES AND CONCENTRATES** | | | | | | | |
| **Total** | **32.6** | **–** | **32.0** | **–** | **34.6** | **–** | **45.6** |
| **Single modes** | **32.5** | **.7** | **32.0** | **–** | **34.6** | **–** | **30.4** |
| Truck | 32.8 | 1.2 | 32.0 | 2.5 | 39.5 | 8.5 | 32.5 |
| For-hire truck | 32.8 | 11.0 | 34.0 | 9.2 | 39.0 | 10.3 | S |
| Private truck | S | S | S | S | S | S | 31.6 |
| Rail | S | S | S | S | S | S | 31.6 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | S | S | S | S | S | S | 31.6 |
| Pipeline | – | – | – | – | S | S | S |
| **Multiple modes** | **S** | **S** | **S** | **S** | **S** | **S** | **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** | **–** | **–** | **–** | **–** | **–** | **–** | **–** |

See footnote at end of table.

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

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

| SCTG code, description, and mode of transportation | Value | | Tons | | Ton-miles | | Average miles per shipment—coefficient of variation |
|---|---|---|---|---|---|---|---|
| | Coefficient of variation of number | Standard error of percentage | Coefficient of variation of number | Standard error of percentage | Coefficient of variation of number | Standard error of percentage | |
| **SCTG 15, COAL** | | | | | | | |
| **Total** | – | – | – | – | – | – | – |
| **Single modes** | – | – | – | – | – | – | – |
| Truck | – | – | – | – | – | – | – |
| For-hire truck | – | – | – | – | – | – | – |
| Private truck | – | – | – | – | – | – | – |
| Rail | – | – | – | – | – | – | – |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | – | – | – | – | – | – | – |
| Pipeline | – | – | – | – | S | S | S |
| **Multiple modes** | – | – | – | – | – | – | – |
| Parcel, U.S. Postal Service or courier | – | – | – | – | – | – | – |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | – | – | – | – | – | – | – |
| **SCTG 17, GASOLINE AND AVIATION TURBINE FUEL** | | | | | | | |
| **Total** | **27.6** | **–** | **25.9** | **–** | **36.3** | **–** | **23.6** |
| **Single modes** | **27.6** | **–** | **25.9** | **–** | **36.3** | **–** | **23.6** |
| Truck | 27.6 | – | 25.9 | – | 36.3 | – | 23.6 |
| For-hire truck | 24.6 | 13.7 | 26.2 | 13.7 | 23.7 | 16.0 | 28.5 |
| Private truck | 45.5 | 14.1 | 43.0 | 14.0 | 49.6 | 14.1 | 21.6 |
| Rail | – | – | – | – | – | – | – |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | – | – | – | – | – | – | – |
| Pipeline | – | – | – | – | S | S | S |
| **Multiple modes** | – | – | – | – | – | – | – |
| Parcel, U.S. Postal Service or courier | – | – | – | – | – | – | – |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | – | – | – | – | – | – | – |
| **SCTG 18, FUEL OILS** | | | | | | | |
| **Total** | **33.7** | **–** | **29.2** | **–** | **46.2** | **–** | **16.2** |
| **Single modes** | **33.7** | **–** | **29.2** | **–** | **46.2** | **–** | **16.2** |
| Truck | 33.9 | .8 | 29.2 | .8 | 46.3 | .3 | 16.2 |
| For-hire truck | 36.8 | 16.1 | 37.6 | 15.9 | 41.0 | 17.1 | 27.5 |
| Private truck | 44.5 | 15.8 | 40.3 | 15.5 | S | S | 22.2 |
| Rail | – | – | – | – | – | – | – |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | – | – | – | – | – | – | – |
| Pipeline | S | S | S | S | S | S | S |
| **Multiple modes** | – | – | – | – | – | – | – |
| Parcel, U.S. Postal Service or courier | – | – | – | – | – | – | – |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **31.6** |

See footnote at end of table.

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

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

| SCTG code, description, and mode of transportation | Value | | Tons | | Ton-miles | | Average miles per shipment—coefficient of variation |
|---|---|---|---|---|---|---|---|
| | Coefficient of variation of number | Standard error of percentage | Coefficient of variation of number | Standard error of percentage | Coefficient of variation of number | Standard error of percentage | |
| **SCTG 19, COAL AND PETROLEUM PRODUCTS, N.E.C.** | | | | | | | |
| **Total** | **38.6** | **–** | **S** | **S** | **40.1** | **–** | **S** |
| **Single modes** | **38.6** | **.2** | **S** | **S** | **40.2** | **1.6** | **S** |
| Truck | 41.9 | 4.6 | S | S | 42.0 | 8.8 | S |
| For-hire truck | 39.5 | 13.2 | S | S | 47.1 | 11.3 | S |
| Private truck | S | S | S | S | S | S | S |
| Rail | 48.3 | 4.7 | 48.0 | 3.9 | S | S | 26.0 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | – | – | – | – | – | – | – |
| Pipeline | – | – | – | – | S | S | S |
| **Multiple modes** | **S** | **S** | **S** | **S** | **S** | **S** | **34.1** |
| Parcel, U.S. Postal Service or courier | S | S | S | S | S | S | 34.1 |
| 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 20, BASIC CHEMICALS** | | | | | | | |
| **Total** | **23.3** | **–** | **S** | **S** | **S** | **S** | **19.8** |
| **Single modes** | **22.3** | **1.9** | **S** | **S** | **S** | **S** | **21.6** |
| Truck | 21.3 | 6.3 | 48.4 | 3.2 | S | S | 41.4 |
| For-hire truck | 26.7 | 10.7 | S | S | S | S | 25.7 |
| Private truck | 38.2 | 10.2 | S | S | S | S | 28.7 |
| Rail | S | S | S | S | S | S | 30.2 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | S | S | 42.2 | .6 | 44.3 | 7.9 | 28.0 |
| Pipeline | – | – | – | – | S | S | S |
| **Multiple modes** | **S** | **S** | **S** | **S** | **S** | **S** | **22.4** |
| Parcel, U.S. Postal Service or courier | S | S | S | S | S | S | 22.4 |
| 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 21, PHARMACEUTICAL PRODUCTS** | | | | | | | |
| **Total** | **17.5** | **–** | **36.1** | **–** | **40.8** | **–** | **41.9** |
| **Single modes** | **23.6** | **7.2** | **38.8** | **6.0** | **44.0** | **7.3** | **43.6** |
| Truck | 23.8 | 6.8 | 39.3 | 5.7 | 45.1 | 7.5 | 44.2 |
| For-hire truck | 24.0 | 6.7 | 41.4 | 8.6 | 46.1 | 10.1 | 43.0 |
| Private truck | 48.9 | 2.0 | 49.8 | 7.5 | S | S | 16.3 |
| Rail | – | – | – | – | – | – | – |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | 44.9 | 1.5 | S | S | S | S | 22.5 |
| Pipeline | – | – | – | – | S | S | S |
| **Multiple modes** | **29.9** | **7.2** | **22.3** | **4.0** | **25.1** | **5.7** | **12.7** |
| Parcel, U.S. Postal Service or courier | 30.2 | 7.2 | 22.4 | 4.0 | 26.0 | 5.8 | 13.4 |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | S | S | S | S | S | S | 31.6 |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **46.3** | **.2** | **48.5** | **2.7** | **47.0** | **1.9** | **34.1** |

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 22, FERTILIZERS** | | | | | | | |
| **Total** | **48.8** | **–** | **S** | **S** | **36.7** | **–** | **S** |
| **Single modes** | **49.3** | **.8** | **S** | **S** | **36.8** | **.1** | **S** |
| Truck | S | S | S | S | 48.3 | 11.6 | S |
| For-hire truck | S | S | S | S | 48.1 | 11.5 | 28.4 |
| Private truck | S | S | S | S | S | S | S |
| Rail | 49.8 | 6.6 | S | S | S | S | 26.8 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | S | S | S | S | S | S | 31.6 |
| Pipeline | – | – | – | – | S | S | S |
| **Multiple modes** | **S** | **S** | **S** | **S** | **S** | **S** | **31.6** |
| Parcel, U.S. Postal Service or courier | S | S | S | S | S | S | 31.6 |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **–** | **–** | **–** | **–** | **–** | **–** | **–** |
| **SCTG 23, CHEMICAL PRODUCTS AND PREPARATIONS, N.E.C.** | | | | | | | |
| **Total** | **17.0** | **–** | **36.7** | **–** | **36.0** | **–** | **S** |
| **Single modes** | **16.6** | **4.7** | **36.1** | **1.5** | **34.9** | **3.7** | **S** |
| Truck | 17.1 | 4.6 | 37.9 | 2.9 | 40.1 | 6.3 | 30.8 |
| For-hire truck | 19.9 | 6.2 | 48.4 | 8.7 | 41.1 | 6.7 | 24.3 |
| Private truck | 25.0 | 4.7 | 29.5 | 7.9 | 43.7 | 2.7 | 34.3 |
| Rail | 44.0 | 2.6 | 40.6 | 3.2 | 44.3 | 7.1 | 21.8 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | S | S | S | S | S | S | 23.4 |
| Pipeline | – | – | – | – | S | S | S |
| **Multiple modes** | **S** | **S** | **S** | **S** | **S** | **S** | **S** |
| Parcel, U.S. Postal Service or courier | S | S | S | S | S | S | S |
| Truck and rail | S | S | S | S | S | S | 30.2 |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **S** |
| **SCTG 24, PLASTICS AND RUBBER** | | | | | | | |
| **Total** | **34.2** | **–** | **33.8** | **–** | **47.4** | **–** | **33.1** |
| **Single modes** | **35.3** | **4.1** | **34.5** | **1.5** | **48.8** | **2.8** | **22.6** |
| Truck | 35.3 | 4.1 | 34.5 | 1.5 | 48.9 | 2.9 | 21.6 |
| For-hire truck | 27.9 | 11.1 | 31.1 | 10.6 | 31.9 | 9.7 | 11.2 |
| Private truck | S | S | 49.8 | 11.2 | S | S | 21.6 |
| Rail | – | – | – | – | – | – | – |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | 45.9 | – | 31.6 | – | 37.4 | .1 | 17.5 |
| Pipeline | – | – | – | – | S | S | S |
| **Multiple modes** | **33.5** | **4.2** | **31.3** | **.9** | **29.1** | **2.4** | **14.4** |
| Parcel, U.S. Postal Service or courier | 33.7 | 4.0 | 31.8 | .8 | 29.8 | 2.3 | 14.8 |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | S | S | S | S | S | S | 29.9 |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | S | S | S | S | S | S | 31.6 |
| **Other and unknown modes** | **41.6** | **1.2** | **47.4** | **1.1** | **47.8** | **1.5** | **S** |

See footnote at end of table.

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

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

| SCTG code, description, and mode of transportation | Value | | Tons | | Ton-miles | | Average miles per shipment—coefficient of variation |
|---|---|---|---|---|---|---|---|
| | Coefficient of variation of number | Standard error of percentage | Coefficient of variation of number | Standard error of percentage | Coefficient of variation of number | Standard error of percentage | |
| **SCTG 25, LOGS AND OTHER WOOD IN THE ROUGH** | | | | | | | |
| **Total** | **44.7** | **–** | **33.5** | **–** | **S** | **S** | **34.4** |
| **Single modes** | **27.5** | **12.4** | **29.1** | **10.2** | **S** | **S** | **28.4** |
| Truck | 28.0 | 12.5 | 28.7 | 10.5 | S | S | 28.3 |
| For-hire truck | 31.9 | 11.3 | 29.4 | 11.3 | 34.6 | 16.0 | 23.6 |
| Private truck | 40.9 | 13.0 | 40.6 | 12.4 | S | S | 39.9 |
| Rail | S | S | S | S | S | S | 31.6 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | – | – | – | – | – | – | – |
| Pipeline | – | – | – | – | S | S | S |
| **Multiple modes** | **S** | **S** | **S** | **S** | **S** | **S** | **31.6** |
| Parcel, U.S. Postal Service or courier | – | – | – | – | – | – | – |
| Truck and rail | S | S | S | S | S | S | 31.6 |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **37.0** |
| **SCTG 26, WOOD PRODUCTS** | | | | | | | |
| **Total** | **14.4** | **–** | **30.4** | **–** | **45.0** | **–** | **31.8** |
| **Single modes** | **16.4** | **4.8** | **32.7** | **7.4** | **47.7** | **4.1** | **44.9** |
| Truck | 18.3 | 6.9 | 38.0 | 10.7 | 48.4 | 12.1 | 36.3 |
| For-hire truck | 38.6 | 7.2 | S | S | S | S | 35.7 |
| Private truck | 19.4 | 9.5 | 33.1 | 10.5 | 16.7 | 12.5 | 13.9 |
| Rail | S | S | S | S | S | S | 31.7 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | – | – | – | – | – | – | – |
| Pipeline | – | – | – | – | S | S | S |
| **Multiple modes** | **S** | **S** | **49.1** | **.9** | **S** | **S** | **25.9** |
| Parcel, U.S. Postal Service or courier | S | S | S | S | S | S | 26.8 |
| Truck and rail | S | S | S | S | S | S | 30.9 |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | S | S | S | S | S | S | 31.6 |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **S** |
| **SCTG 27, PULP, NEWSPRINT, PAPER, AND PAPERBOARD** | | | | | | | |
| **Total** | **41.5** | **–** | **S** | **S** | **S** | **S** | **21.9** |
| **Single modes** | **42.2** | **5.8** | **S** | **S** | **S** | **S** | **38.8** |
| Truck | 42.2 | 5.8 | S | S | S | S | 38.8 |
| For-hire truck | S | S | S | S | S | S | 23.8 |
| Private truck | 46.2 | 10.0 | S | S | S | S | S |
| 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** | **27.9** |
| Parcel, U.S. Postal Service or courier | S | S | S | S | S | S | 27.9 |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **42.7** |

See footnote at end of table.

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

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

| SCTG code, description, and mode of transportation | Value | | Tons | | Ton-miles | | Average miles per shipment—coefficient of variation |
|---|---|---|---|---|---|---|---|
| | Coefficient of variation of number | Standard error of percentage | Coefficient of variation of number | Standard error of percentage | Coefficient of variation of number | Standard error of percentage | |
| **SCTG 28, PAPER OR PAPERBOARD ARTICLES** | | | | | | | |
| **Total** | **28.9** | **–** | **24.6** | **–** | **31.2** | **–** | **24.1** |
| **Single modes** | **28.1** | **2.7** | **24.0** | **1.3** | **25.8** | **5.1** | **S** |
| Truck | 28.0 | 2.7 | 24.0 | 1.4 | 25.3 | 5.5 | S |
| For-hire truck | 31.0 | 4.6 | 24.5 | 4.9 | 26.6 | 4.2 | 10.1 |
| Private truck | 37.7 | 6.4 | 42.8 | 5.0 | 35.9 | 2.8 | S |
| Rail | S | S | S | S | S | S | 31.6 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | S | S | S | S | S | S | 31.6 |
| Pipeline | – | – | – | – | S | S | S |
| **Multiple modes** | **48.3** | **3.0** | **S** | **S** | **S** | **S** | **18.8** |
| Parcel, U.S. Postal Service or courier | 35.8 | 2.3 | 34.0 | .4 | 39.3 | .8 | 18.7 |
| Truck and rail | S | S | S | S | S | S | 28.0 |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **S** |
| **SCTG 29, PRINTED PRODUCTS** | | | | | | | |
| **Total** | **21.1** | **–** | **26.9** | **–** | **37.4** | **–** | **5.8** |
| **Single modes** | **22.3** | **6.6** | **17.0** | **10.6** | **19.9** | **11.7** | **14.3** |
| Truck | 21.6 | 6.1 | 16.7 | 10.3 | 16.2 | 11.5 | 15.6 |
| For-hire truck | 20.8 | 5.5 | 17.3 | 9.2 | 16.3 | 11.2 | 13.0 |
| Private truck | S | S | 43.4 | 2.3 | S | S | 26.4 |
| Rail | S | S | S | S | S | S | 31.6 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | S | S | S | S | S | S | 16.4 |
| Pipeline | – | – | – | – | S | S | S |
| **Multiple modes** | **26.8** | **8.3** | **S** | **S** | **S** | **S** | **5.2** |
| Parcel, U.S. Postal Service or courier | 26.8 | 8.3 | S | S | S | S | 5.2 |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | S | S | S | S | S | S | 31.6 |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **47.5** | **3.3** | **S** | **S** | **S** | **S** | **S** |
| **SCTG 30, TEXTILES, LEATHER, AND ARTICLES OF TEXTILES OR LEATHER** | | | | | | | |
| **Total** | **14.3** | **–** | **11.5** | **–** | **14.8** | **–** | **6.8** |
| **Single modes** | **17.5** | **5.6** | **15.5** | **5.7** | **23.1** | **8.6** | **11.6** |
| Truck | 17.5 | 5.6 | 15.5 | 5.7 | 23.2 | 8.7 | 11.3 |
| For-hire truck | 19.6 | 5.6 | 12.7 | 6.7 | 26.2 | 9.2 | 6.5 |
| Private truck | 24.6 | 2.4 | S | S | S | S | S |
| Rail | – | – | – | – | – | – | – |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | 40.8 | .1 | 44.8 | – | 49.5 | .3 | 19.4 |
| Pipeline | – | – | – | – | S | S | S |
| **Multiple modes** | **18.5** | **5.6** | **22.9** | **5.8** | **27.3** | **8.4** | **5.8** |
| Parcel, U.S. Postal Service or courier | 18.5 | 5.6 | 22.9 | 5.8 | 27.3 | 8.4 | 5.8 |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **39.7** | **.7** | **44.4** | **.5** | **S** | **S** | **27.0** |

See footnote at end of table.

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

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

| SCTG code, description, and mode of transportation | Value | | Tons | | Ton-miles | | Average miles per shipment—coefficient of variation |
|---|---|---|---|---|---|---|---|
| | Coefficient of variation of number | Standard error of percentage | Coefficient of variation of number | Standard error of percentage | Coefficient of variation of number | Standard error of percentage | |
| **SCTG 31, NONMETALLIC MINERAL PRODUCTS** | | | | | | | |
| **Total** | **41.1** | **–** | **22.7** | **–** | **29.0** | **–** | **25.6** |
| **Single modes** | **40.9** | **2.8** | **23.1** | **2.3** | **29.1** | **1.6** | **23.1** |
| Truck | 42.3 | 6.1 | 27.6 | 6.8 | 48.0 | 10.5 | 23.9 |
| For-hire truck | 49.1 | 7.5 | 29.3 | 6.3 | 45.6 | 8.7 | 17.0 |
| Private truck | 36.1 | 5.5 | 44.1 | 7.9 | S | S | 44.8 |
| Rail | 22.2 | 2.3 | 25.4 | 2.9 | 30.2 | 6.8 | 17.8 |
| Water | 42.1 | 4.6 | 41.4 | 6.7 | 41.0 | 10.2 | 26.7 |
| Shallow draft | 42.1 | 4.6 | 41.4 | 6.7 | 41.0 | 10.2 | 26.7 |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | – | – | – | – | – | – | – |
| Pipeline | – | – | – | – | S | S | S |
| **Multiple modes** | **S** | **S** | **40.6** | **–** | **46.0** | **–** | **18.7** |
| Parcel, U.S. Postal Service or courier | S | S | 40.6 | – | 46.0 | – | 18.7 |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **30.2** |
| **SCTG 32, BASE METAL IN PRIMARY OR SEMIFINISHED FORMS AND IN FINISHED BASIC SHAPES** | | | | | | | |
| **Total** | **16.3** | **–** | **17.9** | **–** | **15.9** | **–** | **31.9** |
| **Single modes** | **16.3** | **1.2** | **18.2** | **1.4** | **16.2** | **.9** | **32.8** |
| Truck | 16.2 | 1.2 | 18.2 | 2.3 | 16.7 | 4.4 | 32.3 |
| For-hire truck | 14.9 | 8.0 | 17.8 | 7.8 | 17.5 | 5.3 | 16.3 |
| Private truck | 30.4 | 8.0 | 33.2 | 7.2 | 24.3 | 3.3 | 40.1 |
| Rail | 33.6 | .6 | 37.9 | 1.8 | 40.2 | 4.0 | 26.5 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | 49.7 | – | S | S | S | S | 26.5 |
| Pipeline | – | – | – | – | S | S | S |
| **Multiple modes** | **41.7** | **.5** | **S** | **S** | **S** | **S** | **36.5** |
| Parcel, U.S. Postal Service or courier | 41.7 | .5 | S | S | S | S | 36.5 |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **S** |
| **SCTG 33, ARTICLES OF BASE METAL** | | | | | | | |
| **Total** | **17.9** | **–** | **33.5** | **–** | **49.2** | **–** | **50.0** |
| **Single modes** | **20.9** | **6.7** | **33.9** | **1.4** | **49.7** | **1.3** | **S** |
| Truck | 21.0 | 6.7 | 33.9 | 1.4 | 49.8 | 1.3 | S |
| For-hire truck | 17.7 | 7.5 | 48.3 | 9.0 | S | S | S |
| Private truck | 38.7 | 6.5 | S | S | 33.9 | 7.3 | S |
| Rail | S | S | S | S | S | S | 29.9 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | 37.3 | – | 40.5 | – | 48.2 | – | 26.1 |
| Pipeline | – | – | – | – | S | S | S |
| **Multiple modes** | **40.1** | **6.2** | **43.1** | **1.1** | **36.8** | **1.1** | **18.7** |
| Parcel, U.S. Postal Service or courier | 40.6 | 6.2 | 44.7 | 1.1 | 49.2 | 1.2 | 18.6 |
| Truck and rail | S | S | S | S | S | S | 30.1 |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **S** | **S** | **45.8** | **.6** | **S** | **S** | **S** |

See footnote at end of table.

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

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

| SCTG code, description, and mode of transportation | Value | | Tons | | Ton-miles | | Average miles per shipment—coefficient of variation |
|---|---|---|---|---|---|---|---|
| | Coefficient of variation of number | Standard error of percentage | Coefficient of variation of number | Standard error of percentage | Coefficient of variation of number | Standard error of percentage | |
| **SCTG 34, MACHINERY** | | | | | | | |
| **Total** | **26.0** | **–** | **42.8** | **–** | **49.0** | **–** | **16.3** |
| **Single modes** | **28.4** | **6.1** | **44.0** | **1.5** | **S** | **S** | **21.3** |
| Truck | 30.0 | 6.1 | 44.5 | 1.6 | S | S | 21.0 |
| For-hire truck | 23.1 | 6.7 | S | S | S | S | 10.8 |
| Private truck | S | S | S | S | S | S | 27.9 |
| Rail | 38.0 | .4 | 38.3 | .6 | 40.8 | 1.2 | 24.2 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | S | S | S | S | S | S | 17.2 |
| Pipeline | – | – | – | – | S | S | S |
| **Multiple modes** | **34.9** | **2.4** | **S** | **S** | **S** | **S** | **10.8** |
| Parcel, U.S. Postal Service or courier | 29.3 | 2.4 | 34.0 | 1.2 | 39.8 | 2.9 | 11.1 |
| Truck and rail | S | S | S | S | S | S | 30.0 |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **S** |
| **SCTG 35, ELECTRONIC AND OTHER ELECTRICAL EQUIPMENT AND COMPONENTS AND OFFICE EQUIPMENT** | | | | | | | |
| **Total** | **13.7** | **–** | **9.4** | **–** | **13.5** | **–** | **13.1** |
| **Single modes** | **16.5** | **7.0** | **12.4** | **4.2** | **14.9** | **3.2** | **15.6** |
| Truck | 17.0 | 6.7 | 12.2 | 4.0 | 15.1 | 3.3 | 15.6 |
| For-hire truck | 15.7 | 4.7 | 13.1 | 4.3 | 17.3 | 5.7 | 9.1 |
| Private truck | 29.4 | 4.6 | 19.4 | 4.2 | 28.4 | 5.8 | 21.9 |
| Rail | 46.2 | – | 44.6 | .2 | 44.6 | .8 | 25.8 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | 34.1 | 1.7 | S | S | 39.2 | .8 | 11.5 |
| Pipeline | – | – | – | – | S | S | S |
| **Multiple modes** | **27.4** | **7.5** | **34.1** | **3.2** | **35.3** | **3.3** | **10.6** |
| Parcel, U.S. Postal Service or courier | 27.5 | 7.5 | 34.8 | 3.2 | 36.9 | 3.3 | 10.6 |
| Truck and rail | S | S | S | S | S | S | 31.6 |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **35.3** | **1.4** | **29.4** | **2.8** | **49.2** | **1.1** | **S** |
| **SCTG 36, MOTORIZED AND OTHER VEHICLES (INCLUDING PARTS)** | | | | | | | |
| **Total** | **31.8** | **–** | **21.4** | **–** | **24.4** | **–** | **13.1** |
| **Single modes** | **35.2** | **6.8** | **23.1** | **6.6** | **24.4** | **6.6** | **23.7** |
| Truck | 17.4 | 11.9 | 21.5 | 10.8 | 30.0 | 12.6 | 26.1 |
| For-hire truck | 25.4 | 8.9 | 30.0 | 9.9 | 32.0 | 11.2 | 11.2 |
| Private truck | 29.4 | 6.2 | 29.2 | 6.8 | 28.4 | 3.1 | 19.0 |
| Rail | S | S | S | S | 44.4 | 12.8 | 24.5 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | S | S | S | S | S | S | 27.0 |
| Pipeline | – | – | – | – | S | S | S |
| **Multiple modes** | **42.2** | **2.2** | **44.3** | **.9** | **42.4** | **1.2** | **13.3** |
| Parcel, U.S. Postal Service or courier | 46.3 | 1.7 | S | S | 47.5 | 1.2 | 13.3 |
| Truck and rail | S | S | S | S | S | S | 31.6 |
| Truck and water | S | S | S | S | S | S | 31.6 |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | S | S | S | S | S | S | 31.6 |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **25.4** |

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 37, TRANSPORTATION EQUIPMENT, N.E.C.** | | | | | | | |
| **Total** | **S** | **S** | **S** | **S** | **S** | **S** | **22.2** |
| **Single modes** | **S** | **S** | **S** | **S** | **S** | **S** | **28.3** |
| Truck | S | S | S | S | S | S | 28.0 |
| For-hire truck | S | S | S | S | S | S | 23.3 |
| Private truck | S | S | S | S | S | S | 27.9 |
| Rail | – | – | – | – | – | – | – |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | S | S | 47.1 | 6.9 | S | S | 23.3 |
| Pipeline | – | – | – | – | S | S | S |
| **Multiple modes** | **S** | **S** | **S** | **S** | **S** | **S** | **39.1** |
| Parcel, U.S. Postal Service or courier | S | S | S | S | S | S | 39.1 |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **30.5** |
| **SCTG 38, PRECISION INSTRUMENTS AND APPARATUS** | | | | | | | |
| **Total** | **34.5** | **–** | **S** | **S** | **45.0** | **–** | **30.2** |
| **Single modes** | **42.9** | **12.7** | **S** | **S** | **48.7** | **14.0** | **37.0** |
| Truck | 44.9 | 13.7 | S | S | 49.0 | 16.9 | 22.6 |
| For-hire truck | 47.3 | 12.8 | 46.5 | 14.3 | S | S | 23.5 |
| Private truck | S | S | S | S | S | S | 38.7 |
| Rail | – | – | – | – | – | – | – |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | S | S | S | S | S | S | 27.4 |
| Pipeline | – | – | – | – | S | S | S |
| **Multiple modes** | **S** | **S** | **S** | **S** | **S** | **S** | **21.3** |
| Parcel, U.S. Postal Service or courier | S | S | S | S | S | S | 20.9 |
| 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** | **30.0** |
| **SCTG 39, FURNITURE, MATTRESSES AND MATTRESS SUPPORTS, LAMPS, LIGHTING FITTINGS, AND ILLUMINATED SIGNS** | | | | | | | |
| **Total** | **29.1** | **–** | **27.4** | **–** | **28.1** | **–** | **18.4** |
| **Single modes** | **31.5** | **4.0** | **28.2** | **1.3** | **28.0** | **4.1** | **26.6** |
| Truck | 31.8 | 4.1 | 28.2 | 1.7 | 27.6 | 4.0 | 26.6 |
| For-hire truck | 32.3 | 9.1 | 25.9 | 8.7 | 28.4 | 12.3 | 21.6 |
| Private truck | S | S | S | S | 29.8 | 10.4 | S |
| Rail | S | S | S | S | S | S | 31.6 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | – | – | – | – | – | – | – |
| Pipeline | – | – | – | – | S | S | S |
| **Multiple modes** | **S** | **S** | **S** | **S** | **S** | **S** | **20.4** |
| Parcel, U.S. Postal Service or courier | S | S | S | S | S | S | 20.4 |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **26.0** |

See footnote at end of table.

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

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

| SCTG code, description, and mode of transportation | Value | | Tons | | Ton-miles | | Average miles per shipment—coefficient of variation |
|---|---|---|---|---|---|---|---|
| | Coefficient of variation of number | Standard error of percentage | Coefficient of variation of number | Standard error of percentage | Coefficient of variation of number | Standard error of percentage | |
| **SCTG 40, MISCELLANEOUS MANUFACTURED PRODUCTS** | | | | | | | |
| **Total** | **28.1** | **–** | **21.9** | **–** | **28.4** | **–** | **7.9** |
| **Single modes** | **34.6** | **5.5** | **22.5** | **4.4** | **31.6** | **6.0** | **12.6** |
| Truck | 34.9 | 5.6 | 20.7 | 4.4 | 28.4 | 5.8 | 10.9 |
| For-hire truck | 18.2 | 8.3 | 22.6 | 6.4 | 29.8 | 6.9 | 7.9 |
| Private truck | S | S | 26.7 | 4.4 | 34.2 | 2.8 | 25.1 |
| Rail | S | S | S | S | S | S | 30.7 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | 47.8 | .1 | 36.8 | – | 39.2 | – | 15.9 |
| Pipeline | – | – | – | – | S | S | S |
| **Multiple modes** | **26.0** | **5.1** | **30.6** | **.9** | **33.1** | **1.7** | **7.8** |
| Parcel, U.S. Postal Service or courier | 26.1 | 5.1 | 31.2 | .8 | 34.4 | 1.5 | 7.9 |
| Truck and rail | S | S | S | S | S | S | 30.9 |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **31.6** |
| **SCTG 41, WASTE AND SCRAP** | | | | | | | |
| **Total** | **36.8** | **–** | **42.1** | **–** | **42.5** | **–** | **18.4** |
| **Single modes** | **36.4** | **4.1** | **43.6** | **4.9** | **49.4** | **8.3** | **14.5** |
| Truck | 37.3 | 6.9 | S | S | 46.1 | 13.7 | 17.9 |
| For-hire truck | 33.1 | 11.0 | S | S | S | S | 18.4 |
| Private truck | S | S | S | S | S | S | 26.4 |
| Rail | S | S | S | S | S | S | 32.3 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | – | – | – | – | – | – | – |
| Pipeline | – | – | – | – | S | S | S |
| **Multiple modes** | **S** | **S** | **S** | **S** | **S** | **S** | **28.7** |
| Parcel, U.S. Postal Service or courier | S | S | S | S | S | S | 31.6 |
| Truck and rail | S | S | S | S | S | S | 30.0 |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **26.3** |
| **SCTG 43, MIXED FREIGHT** | | | | | | | |
| **Total** | **31.7** | **–** | **12.2** | **–** | **9.4** | **–** | **18.7** |
| **Single modes** | **35.8** | **3.6** | **12.8** | **.9** | **11.8** | **4.6** | **32.8** |
| Truck | 37.0 | 4.3 | 13.1 | 1.1 | 13.1 | 5.7 | 30.3 |
| For-hire truck | 16.1 | 4.0 | 15.3 | 4.8 | 16.8 | 5.9 | 24.9 |
| Private truck | 46.5 | 7.6 | 21.0 | 5.4 | 31.6 | 7.5 | 35.4 |
| Rail | 47.5 | 1.7 | 31.7 | .5 | 34.5 | 1.9 | 23.0 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | S | S | S | S | S | S | 29.9 |
| Pipeline | – | – | – | – | S | S | S |
| **Multiple modes** | **17.1** | **2.4** | **23.3** | **.5** | **26.3** | **5.0** | **4.9** |
| Parcel, U.S. Postal Service or courier | 32.5 | 2.0 | 35.0 | .2 | 37.2 | .4 | 5.8 |
| Truck and rail | 49.3 | .4 | 47.9 | .5 | 46.3 | 2.3 | 26.1 |
| Truck and water | S | S | S | S | S | S | 29.8 |
| Rail and water | S | S | S | S | S | S | 27.9 |
| 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 | |
| **COMMODITY UNKNOWN** | | | | | | | |
| **Total** | **38.6** | **–** | **29.5** | **–** | **40.2** | **–** | **24.4** |
| **Single modes** | **41.8** | **8.3** | **29.7** | **.4** | **40.5** | **.5** | **25.7** |
| Truck | 46.8 | 11.1 | 32.2 | 10.0 | 49.7 | 10.7 | 21.3 |
| For-hire truck | 42.5 | 13.1 | 44.6 | 14.1 | 49.1 | 14.2 | 45.8 |
| Private truck | S | S | S | S | S | S | 21.8 |
| Rail | S | S | S | S | S | S | 31.6 |
| Water | – | – | – | – | – | – | – |
| Shallow draft | – | – | – | – | – | – | – |
| Great Lakes | – | – | – | – | – | – | – |
| Deep draft | – | – | – | – | – | – | – |
| Air (includes truck and air) | S | S | S | S | S | S | 31.6 |
| Pipeline | – | – | – | – | S | S | S |
| **Multiple modes** | **S** | **S** | **46.2** | **.4** | **S** | **S** | **22.0** |
| Parcel, U.S. Postal Service or courier | S | S | 46.2 | .4 | S | S | 22.0 |
| Truck and rail | – | – | – | – | – | – | – |
| Truck and water | – | – | – | – | – | – | – |
| Rail and water | – | – | – | – | – | – | – |
| Other multiple modes | – | – | – | – | – | – | – |
| **Other and unknown modes** | **S** | **S** | **S** | **S** | **S** | **S** | **31.6** |

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

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

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

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

| State of destination | Value | | Tons | | Ton-miles | |
|---|---|---|---|---|---|---|
| | Coefficient of variation of number | Standard error of percentage | Coefficient of variation of number | Standard error of percentage | Coefficient of variation of number | Standard error of percentage |
| **Total** | **4.5** | **–** | **10.2** | **–** | **9.8** | **–** |
| **NEW ENGLAND STATES** | | | | | | |
| Connecticut | 40.5 | .1 | 29.0 | – | 30.1 | – |
| Maine | 21.1 | – | 38.9 | – | 34.8 | – |
| Massachusetts | 23.3 | .1 | 19.7 | – | 19.1 | – |
| New Hampshire | S | S | S | S | 49.6 | – |
| Rhode Island | 31.7 | – | S | S | S | S |
| Vermont | 47.9 | – | 32.8 | – | 32.7 | – |
| **MIDDLE ATLANTIC STATES** | | | | | | |
| New Jersey | 24.1 | .3 | 46.4 | .2 | 47.5 | .7 |
| New York | 16.9 | .3 | 19.5 | – | 20.4 | .3 |
| Pennsylvania | 12.2 | .2 | 16.4 | .1 | 14.1 | .5 |
| **EAST NORTH CENTRAL STATES** | | | | | | |
| Illinois | 8.2 | .7 | 28.6 | 1.2 | 20.3 | .7 |
| Indiana | 11.9 | .4 | 15.3 | .4 | 13.6 | .4 |
| Michigan | 15.5 | .3 | 20.4 | .2 | 21.1 | .4 |
| Ohio | 48.2 | 2.3 | 24.2 | .3 | 24.9 | .4 |
| Wisconsin | 15.8 | .2 | 41.9 | .2 | 38.6 | .3 |
| **WEST NORTH CENTRAL STATES** | | | | | | |
| Iowa | 17.6 | .4 | 31.4 | 1.1 | 36.0 | 1.3 |
| Kansas | 8.7 | .4 | 18.0 | 1.1 | 15.6 | .4 |
| Minnesota | 13.7 | .2 | 24.5 | .2 | 26.1 | .4 |
| Missouri | 7.5 | 2.4 | 14.5 | 3.6 | 19.0 | 2.0 |
| Nebraska | 20.9 | .4 | 35.4 | 1.3 | 43.4 | 1.8 |
| North Dakota | 22.5 | – | 42.4 | – | 43.5 | .2 |
| South Dakota | 20.9 | – | 47.6 | – | 44.2 | .1 |
| **SOUTH ATLANTIC STATES** | | | | | | |
| Delaware | S | S | 49.3 | – | 46.7 | – |
| District of Columbia | 38.4 | – | 40.4 | – | 41.5 | – |
| Florida | 14.2 | .2 | 29.0 | .2 | 30.6 | .7 |
| Georgia | 22.7 | .3 | 29.2 | .3 | 26.7 | .5 |
| Maryland | 42.1 | .4 | 26.7 | – | 29.0 | .1 |
| North Carolina | 9.2 | – | 27.8 | – | 29.8 | .2 |
| South Carolina | 12.3 | – | 30.5 | – | 33.7 | .1 |
| Virginia | 13.5 | – | 39.9 | – | 45.8 | .3 |
| West Virginia | 24.0 | – | S | S | S | S |
| **EAST SOUTH CENTRAL STATES** | | | | | | |
| Alabama | 24.0 | .3 | S | S | S | S |
| Kentucky | S | S | S | S | 47.6 | .6 |
| Mississippi | 16.7 | .1 | 49.0 | .3 | S | S |
| Tennessee | 21.7 | .6 | 34.6 | 1.0 | 35.5 | 1.0 |
| **WEST SOUTH CENTRAL STATES** | | | | | | |
| Arkansas | 18.0 | .5 | 23.4 | .8 | 29.3 | 1.3 |
| Louisiana | 20.5 | .2 | 34.6 | 1.8 | 36.9 | 5.0 |
| Oklahoma | 22.9 | .5 | 12.6 | .2 | 13.3 | .1 |
| Texas | 7.7 | .4 | 27.0 | 1.1 | 28.0 | 3.0 |
| **MOUNTAIN STATES** | | | | | | |
| Arizona | 28.2 | .3 | 27.9 | – | 27.2 | .5 |
| Colorado | 24.1 | .3 | 24.4 | .1 | 20.5 | .3 |
| Idaho | 30.5 | – | 34.9 | – | 38.4 | – |
| Montana | 37.4 | – | 28.8 | – | 30.2 | – |
| Nevada | 25.8 | – | 44.4 | – | 46.0 | .1 |
| New Mexico | 16.4 | – | S | S | S | S |
| Utah | S | S | 49.8 | .1 | 46.8 | .4 |
| Wyoming | 45.0 | – | S | S | S | S |
| **PACIFIC STATES** | | | | | | |
| Alaska | 38.4 | – | 38.8 | – | 46.1 | – |
| California | 8.1 | .3 | 11.0 | .2 | 11.2 | 1.0 |
| Hawaii | 27.0 | – | 30.2 | – | 29.1 | – |
| Oregon | 27.3 | .1 | S | S | S | S |
| Washington | 22.5 | .2 | 29.0 | – | 28.9 | .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.

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

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

| State of origin | Value | | Tons | | Ton-miles | |
|---|---|---|---|---|---|---|
| | Coefficient of variation of number | Standard error of percentage | Coefficient of variation of number | Standard error of percentage | Coefficient of variation of number | Standard error of percentage |
| **Total** | **2.7** | **–** | **7.7** | **–** | **10.9** | **–** |
| **NEW ENGLAND STATES** | | | | | | |
| Connecticut | 20.4 | – | 24.2 | – | 24.3 | – |
| Maine | 32.6 | – | S | S | S | S |
| Massachusetts | 32.9 | .2 | 24.5 | – | 24.0 | – |
| New Hampshire | 18.8 | – | 41.6 | – | 40.7 | – |
| Rhode Island | 33.7 | – | 42.6 | – | 42.5 | – |
| Vermont | 15.6 | – | 33.8 | – | 35.3 | – |
| **MIDDLE ATLANTIC STATES** | | | | | | |
| New Jersey | 18.6 | .2 | 23.9 | – | 24.7 | .4 |
| New York | 19.2 | .3 | 42.9 | .2 | 45.3 | .5 |
| Pennsylvania | 14.2 | .2 | 14.6 | – | 16.5 | .3 |
| **EAST NORTH CENTRAL STATES** | | | | | | |
| Illinois | 7.6 | .6 | 11.0 | 1.2 | 11.8 | .4 |
| Indiana | 26.4 | .9 | 20.5 | .3 | 20.6 | .4 |
| Michigan | 18.4 | 1.2 | 12.3 | .2 | 12.8 | .7 |
| Ohio | 14.8 | .6 | 13.3 | .1 | 13.8 | .4 |
| Wisconsin | 9.6 | .2 | 41.0 | .3 | 39.7 | .4 |
| **WEST NORTH CENTRAL STATES** | | | | | | |
| Iowa | 10.5 | .2 | 14.5 | .2 | 16.7 | .6 |
| Kansas | 14.8 | .9 | 13.7 | .8 | 18.0 | .3 |
| Minnesota | 40.5 | .8 | 39.8 | .3 | 41.9 | .7 |
| Missouri | 7.5 | 1.9 | 14.5 | 4.4 | 19.0 | 1.6 |
| Nebraska | 15.5 | .2 | 23.1 | .1 | 22.0 | .2 |
| North Dakota | 26.9 | – | S | S | S | S |
| South Dakota | 34.5 | – | S | S | S | S |
| **SOUTH ATLANTIC STATES** | | | | | | |
| Delaware | 38.7 | – | 45.3 | – | 44.3 | – |
| District of Columbia | S | S | S | S | S | S |
| Florida | 14.4 | .1 | 17.5 | – | 19.7 | .4 |
| Georgia | 12.0 | .2 | 26.9 | .1 | 23.9 | .3 |
| Maryland | 32.5 | .1 | 25.8 | – | 24.5 | – |
| North Carolina | 15.7 | .2 | 23.9 | – | 26.3 | .1 |
| South Carolina | 11.8 | – | 24.9 | – | 23.7 | – |
| Virginia | 20.4 | .1 | 23.5 | – | 20.7 | .1 |
| West Virginia | 29.1 | – | 28.4 | – | 26.5 | – |
| **EAST SOUTH CENTRAL STATES** | | | | | | |
| Alabama | 21.3 | .2 | 18.7 | – | 16.0 | .2 |
| Kentucky | 33.8 | .9 | 35.6 | .3 | 39.7 | .3 |
| Mississippi | 33.3 | .5 | 15.8 | – | 16.7 | .2 |
| Tennessee | 25.5 | .9 | 27.5 | .4 | 22.8 | .3 |
| **WEST SOUTH CENTRAL STATES** | | | | | | |
| Arkansas | 18.7 | .5 | 19.9 | .4 | 25.1 | .5 |
| Louisiana | 20.5 | .2 | 23.8 | .3 | 27.4 | .8 |
| Oklahoma | 27.9 | .3 | 24.9 | .3 | 20.5 | .4 |
| Texas | 17.0 | .5 | 10.7 | .2 | 12.0 | .6 |
| **MOUNTAIN STATES** | | | | | | |
| Arizona | 26.8 | – | S | S | 49.1 | – |
| Colorado | 15.9 | – | S | S | 49.5 | .7 |
| Idaho | 35.8 | – | 27.0 | – | 28.3 | .2 |
| Montana | 24.6 | – | 35.3 | – | 34.3 | .1 |
| Nevada | 25.9 | – | 45.4 | – | 44.9 | .1 |
| New Mexico | 30.6 | – | 31.1 | – | 32.1 | .1 |
| Utah | 24.7 | – | 39.4 | .1 | 40.0 | .4 |
| Wyoming | 14.1 | – | 19.8 | 2.6 | 20.5 | 5.9 |
| **PACIFIC STATES** | | | | | | |
| Alaska | S | S | S | S | S | S |
| California | 19.6 | .7 | 35.6 | .2 | 34.3 | 1.1 |
| Hawaii | S | S | S | S | S | S |
| Oregon | 35.8 | .2 | 43.7 | .1 | 44.9 | 1.0 |
| Washington | 34.7 | .1 | 15.8 | – | 15.7 | – |

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

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

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

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

| Mode of transportation | Value | | | Tons | | | Ton-miles | | | Average miles per shipment | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Coefficient of variation of number | | Standard error of percent change | Coefficient of variation of number | | Standard error of percent change | Coefficient of variation of number | | Standard error of percent change | Coefficient of variation of number | | Standard error of percent change |
| | 2002 | 1997 | | 2002 | 1997 | | 2002 | 1997 | | 2002 | 1997 | |
| **Total** | **4.5** | **5.7** | **9.2** | **10.2** | **5.7** | **15.8** | **9.8** | **9.5** | **20.2** | **8.6** | **11.6** | **13.5** |
| **Single modes** | **5.4** | **5.9** | **10.3** | **10.7** | **5.8** | **16.5** | **10.0** | **9.4** | **19.7** | **13.9** | **7.3** | **16.5** |
| Truck | 4.3 | 3.2 | 7.3 | 13.4 | 8.9 | 20.7 | 14.5 | 5.4 | 24.4 | 12.3 | 4.5 | 16.1 |
| Rail | 39.1 | 38.2 | 58.6 | 17.3 | 18.6 | 55.4 | 17.7 | 22.9 | 51.4 | 8.8 | 8.4 | 9.6 |
| Water | 33.8 | 36.3 | 45.6 | S | 20.1 | S | 35.9 | 22.2 | 38.7 | S | 10.2 | S |
| Air (includes truck and air) | 28.7 | 15.6 | 25.6 | 29.3 | 27.4 | 50.0 | 34.9 | 25.3 | 65.3 | 5.7 | 2.1 | 6.3 |
| Pipeline | S | 42.1 | S | S | 41.8 | S | S | S | S | S | S | S |
| **Multiple modes** | **6.3** | **14.9** | **18.0** | **48.5** | **28.2** | **136.7** | **34.2** | **28.1** | **105.7** | **4.8** | **9.3** | **10.5** |
| Parcel, U.S. Postal Service or courier | 8.3 | 13.8 | 18.6 | 22.4 | 21.1 | 46.2 | 31.3 | 34.7 | 78.4 | 4.8 | 9.3 | 10.6 |
| Truck and rail | 32.2 | 31.9 | 25.2 | 40.3 | 33.7 | 42.2 | 36.9 | 28.5 | 52.4 | 15.6 | 5.6 | 23.2 |
| All other multiple modes | 34.6 | S | S | S | 49.3 | S | S | S | S | S | 39.4 | S |
| **Other and unknown modes** | **26.8** | **14.4** | **26.9** | **40.3** | **15.2** | **27.9** | **46.0** | **15.2** | **93.2** | **34.1** | **22.6** | **141.8** |

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

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

| SCTG code | Commodity description | Value | | | Tons | | | Ton-miles | | | Average miles per shipment | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Coefficient of variation of number | | Standard error of percent change | Coefficient of variation of number | | Standard error of percent change | Coefficient of variation of number | | Standard error of percent change | Coefficient of variation of number | | Standard error of percent change |
| | | 2002 | 1997 | | 2002 | 1997 | | 2002 | 1997 | | 2002 | 1997 | |
| | **Total** | **4.5** | **5.7** | **9.2** | **10.2** | **5.7** | **15.8** | **9.8** | **9.5** | **20.2** | **8.6** | **11.6** | **13.5** |
| 01-05 | Agricultural products and fish | 20.2 | 9.7 | 23.6 | 21.9 | 12.4 | 41.3 | 21.3 | 24.2 | 48.3 | 39.0 | 31.2 | 62.5 |
| 06-09 | Grains, alcohol, and tobacco products | 25.5 | 8.4 | 33.2 | 20.5 | 18.7 | 35.6 | 21.8 | 28.0 | 49.1 | S | 27.2 | S |
| 10-14 | Stones, nonmetallic minerals, and metallic ores | 12.0 | 15.8 | 13.7 | 17.9 | 16.4 | 32.8 | 29.8 | 21.9 | 55.2 | 11.7 | 41.7 | 57.6 |
| 15-19 | Coal and petroleum products | 25.0 | 22.1 | 33.4 | 24.0 | 22.7 | 29.7 | 25.2 | 36.4 | 29.2 | 46.2 | S | S |
| 20-24 | Basic chemicals, chemical, and pharmaceutical products | 7.9 | 5.3 | 13.0 | 36.8 | 10.9 | 53.9 | 47.9 | 16.4 | 62.6 | 17.8 | 10.1 | 19.4 |
| 25-30 | Logs, wood products, and textile and leather | 10.2 | 12.1 | 18.3 | 18.5 | 9.7 | 21.4 | 12.8 | 11.8 | 21.1 | 6.1 | 12.1 | 12.6 |
| 31-34 | Base metal and machinery | 9.4 | 4.9 | 13.9 | 12.0 | 15.0 | 16.7 | 22.6 | 13.7 | 37.8 | 27.4 | 13.0 | 36.7 |
| 35-38 | Electronic, motorized vehicles, and precision instruments | 20.5 | 17.4 | 24.4 | 48.9 | 15.2 | 75.6 | 43.1 | 21.5 | 50.5 | 8.6 | 6.5 | 14.4 |
| 39-43 | Furniture, mixed freight and misc. manufactured prod. | 16.9 | 18.2 | 56.4 | 27.1 | 15.2 | 93.6 | 27.9 | 21.7 | 112.6 | 12.2 | 8.2 | 13.5 |
| -- | Commodity unknown | 38.6 | 45.1 | 14.8 | 29.5 | 44.1 | 20.0 | 40.2 | 39.0 | 49.2 | 24.4 | 20.4 | 36.2 |

– 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.*

# 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.