Indiana: 2002

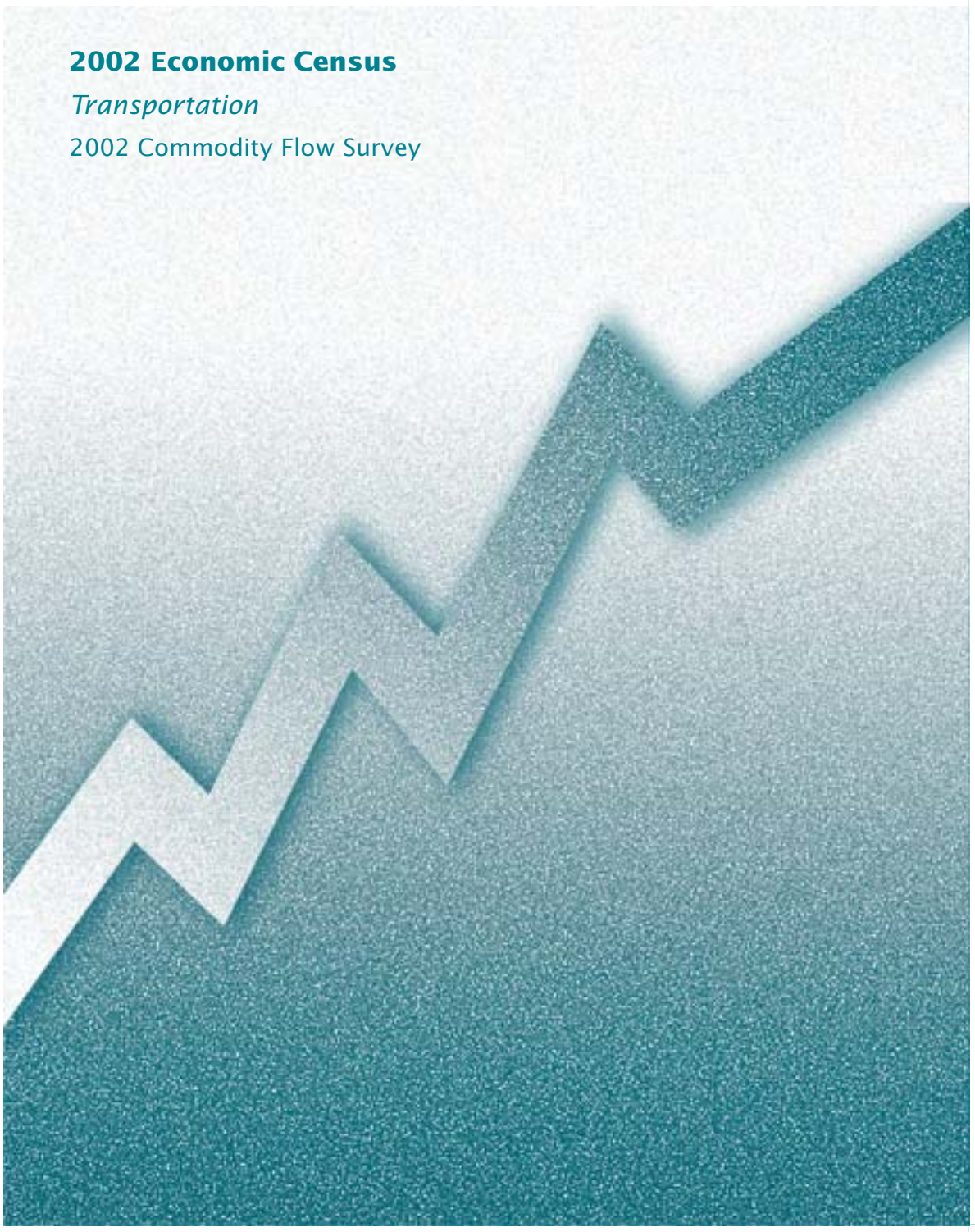
Issued December 2004

EC02TCF-IN

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

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CONTENTS

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	**291 458**	**100.0**	**397 829**	**100.0**	**82 601**	**100.0**	**682**
Single modes	**244 448**	**83.9**	**382 357**	**96.1**	**74 388**	**90.1**	**150**
Truck[2]	225 612	77.4	291 532	73.3	41 147	49.8	136
For-hire truck	137 010	47.0	142 936	35.9	31 603	38.3	431
Private truck	88 383	30.3	147 908	37.2	9 445	11.4	53
Rail	11 600	4.0	57 902	14.6	28 614	34.6	667
Water	1 153	.4	14 935	3.8	4 294	5.2	S
Shallow draft	S	S	13 757	3.5	4 293	5.2	S
Great Lakes	S	S	S	S	S	S	1
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	1 465
Pipeline[3]	S	S	S	S	S	S	S
Multiple modes	**32 216**	**11.1**	**6 260**	**1.6**	**6 338**	**7.7**	**897**
Parcel, U.S. Postal Service or courier	24 999	8.6	682	.2	461	.6	896
Truck and rail	6 343	2.2	1 938	.5	2 105	2.5	1 340
Truck and water	23	–	S	S	S	S	4 367
Rail and water	5	–	111	–	36	–	303
Other multiple modes	S	S	S	S	S	S	1 050
Other and unknown modes	**14 794**	**5.1**	**9 212**	**2.3**	**1 875**	**2.3**	**116**

– 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	**83.9**	**84.8**	**96.1**	**95.8**	**90.1**	**90.6**
Truck[2]	77.4	76.7	73.3	74.4	49.8	51.5
For-hire truck	47.0	51.9	35.9	37.7	38.3	39.2
Private truck	30.3	24.2	37.2	36.5	11.4	12.0
Rail	4.0	5.6	14.6	17.6	34.6	32.9
Water	.4	.6	3.8	2.4	5.2	5.7
Shallow draft	S	.6	3.5	2.4	5.2	5.7
Great Lakes	S	–	S	–	S	–
Deep draft	–	–	–	–	–	–
Air (includes truck and air)	S	1.4	S	–	S	.2
Pipeline[3]	S	.5	S	1.4	S	S
Multiple modes	**11.1**	**10.5**	**1.6**	**S**	**7.7**	**6.9**
Parcel, U.S. Postal Service or courier	8.6	7.7	.2	.2	.6	.6
Truck and rail	2.2	2.5	.5	S	2.5	3.7
Truck and water	–	–	S	S	S	S
Rail and water	–	–	–	–	–	–
Other multiple modes	S	S	S	S	S	S
Other and unknown modes	**5.1**	**4.6**	**2.3**	**2.0**	**2.3**	**2.5**

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

[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	**82 601**	**100.0**	**682**
Truck	41 147	49.8	136
Rail	28 614	34.6	667
Shallow draft	4 293	5.2	S
Great Lakes	S	S	1
Deep draft	–	–	–
Air	S	S	1 465
Parcel, U.S. Postal Service or courier	89	.1	S
Pipeline[3]	S	S	S
Other and unknown modes	1 875	2.3	116

– 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	**291 458**	**100.0**	**397 829**	**100.0**	**82 601**	**100.0**
Less than 50 miles	71 023	24.4	232 078	58.3	4 723	5.7
50 to 99 miles	24 773	8.5	27 542	6.9	2 533	3.1
100 to 249 miles	69 882	24.0	57 955	14.6	11 697	14.2
250 to 499 miles	46 818	16.1	43 625	11.0	23 936	29.0
500 to 749 miles	36 074	12.4	22 009	5.5	17 361	21.0
750 to 999 miles	19 152	6.6	7 683	1.9	8 495	10.3
1,000 to 1,499 miles	9 081	3.1	2 037	.5	2 901	3.5
1,500 to 1,999 miles	14 558	5.0	4 880	1.2	10 904	13.2
2,000 miles or more	98	–	S	S	S	S
Single modes	**244 448**	**100.0**	**382 357**	**100.0**	**74 388**	**100.0**
Less than 50 miles	61 173	25.0	228 034	59.6	4 683	6.3
50 to 99 miles	21 600	8.8	26 397	6.9	2 428	3.3
100 to 249 miles	63 694	26.1	54 841	14.3	11 033	14.8
250 to 499 miles	40 125	16.4	40 254	10.5	21 552	29.0
500 to 749 miles	28 663	11.7	20 734	5.4	16 447	22.1
750 to 999 miles	12 903	5.3	6 012	1.6	6 214	8.4
1,000 to 1,499 miles	6 988	2.9	1 801	.5	2 557	3.4
1,500 to 1,999 miles	9 254	3.8	4 266	1.1	9 430	12.7
2,000 miles or more	S	S	S	S	S	S
Truck[3]	**225 612**	**100.0**	**291 532**	**100.0**	**41 147**	**100.0**
Less than 50 miles	55 759	24.7	187 985	64.5	3 980	9.7
50 to 99 miles	20 889	9.3	21 365	7.3	1 839	4.5
100 to 249 miles	60 100	26.6	45 375	15.6	8 690	21.1
250 to 499 miles	36 819	16.3	19 471	6.7	8 408	20.4
500 to 749 miles	25 730	11.4	9 729	3.3	6 826	16.6
750 to 999 miles	12 046	5.3	3 466	1.2	3 486	8.5
1,000 to 1,499 miles	6 218	2.8	1 318	.5	1 842	4.5
1,500 to 1,999 miles	8 008	3.5	2 806	1.0	6 035	14.7
2,000 miles or more	S	S	S	S	S	S
For-hire truck	**137 010**	**100.0**	**142 936**	**100.0**	**31 603**	**100.0**
Less than 50 miles	13 030	9.5	70 210	49.1	1 631	5.2
50 to 99 miles	7 538	5.5	10 892	7.6	964	3.0
100 to 249 miles	39 766	29.0	31 019	21.7	6 043	19.1
250 to 499 miles	30 644	22.4	15 469	10.8	6 761	21.4
500 to 749 miles	22 515	16.4	8 610	6.0	6 042	19.1
750 to 999 miles	10 663	7.8	3 063	2.1	3 082	9.8
1,000 to 1,499 miles	5 799	4.2	1 123	.8	1 575	5.0
1,500 to 1,999 miles	7 040	5.1	2 534	1.8	5 465	17.3
2,000 miles or more	S	S	S	S	S	S
Private truck	**88 383**	**100.0**	**147 908**	**100.0**	**9 445**	**100.0**
Less than 50 miles	42 640	48.2	117 526	79.5	2 339	24.8
50 to 99 miles	13 304	15.1	10 301	7.0	854	9.0
100 to 249 miles	20 292	23.0	14 196	9.6	2 621	27.7
250 to 499 miles	6 144	7.0	3 914	2.6	1 618	17.1
500 to 749 miles	3 206	3.6	1 101	.7	772	8.2
750 to 999 miles	1 381	1.6	404	.3	404	4.3
1,000 to 1,499 miles	417	.5	195	.1	267	2.8
1,500 to 1,999 miles	967	1.1	271	.2	569	6.0
2,000 miles or more	S	S	S	S	S	S
Rail	**11 600**	**100.0**	**57 902**	**100.0**	**28 614**	**100.0**
Less than 50 miles	732	6.3	14 545	25.1	603	2.1
50 to 99 miles	430	3.7	2 797	4.8	381	1.3
100 to 249 miles	3 223	27.8	8 553	14.8	2 061	7.2
250 to 499 miles	3 144	27.1	19 958	34.5	12 680	44.3
500 to 749 miles	2 011	17.3	7 784	13.4	6 275	21.9
750 to 999 miles	692	6.0	2 327	4.0	2 513	8.8
1,000 to 1,499 miles	503	4.3	480	.8	709	2.5
1,500 to 1,999 miles	S	S	1 458	2.5	3 392	11.9
2,000 miles or more	–	–	–	–	–	–
Water	**1 153**	**100.0**	**14 935**	**100.0**	**4 294**	**100.0**
Less than 50 miles	S	S	S	S	75	1.7
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	379	32.9	3 216	21.5	3 338	77.7
750 to 999 miles	–	–	–	–	–	–
1,000 to 1,499 miles	–	–	–	–	–	–
1,500 to 1,999 miles	–	–	–	–	–	–
2,000 miles or more	–	–	–	–	–	–
Shallow draft	**S**	**S**	**13 757**	**100.0**	**4 293**	**100.0**
Less than 50 miles	S	S	S	S	73	1.7
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	379	35.8	3 216	23.4	3 338	77.7
750 to 999 miles	–	–	–	–	–	–
1,000 to 1,499 miles	–	–	–	–	–	–
1,500 to 1,999 miles	–	–	–	–	–	–
2,000 miles or more	–	–	–	–	–	–

See footnotes at end of table.

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

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

Mode of transportation and distance shipped[1] (based on Great Circle Distance)	Value		Tons		Ton-miles[2]	
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent
Single modes—Con.						
Great Lakes	**S**	**S**	**S**	**S**	**S**	**S**
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	–	–	–	–	–	–
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)	**S**	**S**	**S**	**S**	**S**	**S**
Less than 50 miles	–	–	–	–	–	–
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	145	7.9	5	2.1	3	1.3
500 to 749 miles	543	29.4	5	2.0	9	3.6
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	S	S	S	S	S	S
1,500 to 1,999 miles	S	S	2	.7	4	1.6
2,000 miles or more	4	.2	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	S	S	S	S
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	–	–	–	–	S	S
500 to 749 miles	S	S	S	S	S	S
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	–	–	–	–	S	S
1,500 to 1,999 miles	–	–	–	–	S	S
2,000 miles or more	–	–	–	–	S	S
Multiple modes	**32 216**	**100.0**	**6 260**	**100.0**	**6 338**	**100.0**
Less than 50 miles	1 452	4.5	40	.6	1	–
50 to 99 miles	2 353	7.3	99	1.6	9	.1
100 to 249 miles	4 049	12.6	S	S	S	S
250 to 499 miles	5 800	18.0	S	S	S	S
500 to 749 miles	6 380	19.8	403	6.4	S	S
750 to 999 miles	5 643	17.5	S	S	S	S
1,000 to 1,499 miles	2 000	6.2	222	3.6	325	5.1
1,500 to 1,999 miles	4 489	13.9	553	8.8	1 340	21.1
2,000 miles or more	49	.2	2	–	8	.1
Parcel, U.S. Postal Service or courier	**24 999**	**100.0**	**682**	**100.0**	**461**	**100.0**
Less than 50 miles	1 452	5.8	40	5.8	1	.3
50 to 99 miles	2 297	9.2	53	7.8	5	1.1
100 to 249 miles	3 879	15.5	132	19.3	26	5.6
250 to 499 miles	4 455	17.8	153	22.5	71	15.5
500 to 749 miles	5 336	21.3	131	19.2	94	20.4
750 to 999 miles	3 658	14.6	68	10.0	68	14.8
1,000 to 1,499 miles	951	3.8	40	5.9	56	12.1
1,500 to 1,999 miles	2 935	11.7	64	9.4	138	29.9
2,000 miles or more	38	.2	1	–	2	.4
Truck and rail	**6 343**	**100.0**	**1 938**	**100.0**	**2 105**	**100.0**
Less than 50 miles	–	–	–	–	–	–
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	156	2.5	S	S	S	S
250 to 499 miles	S	S	87	4.5	60	2.9
500 to 749 miles	1 045	16.5	S	S	S	S
750 to 999 miles	S	S	136	7.0	154	7.3
1,000 to 1,499 miles	1 049	16.5	182	9.4	269	12.8
1,500 to 1,999 miles	1 555	24.5	489	25.2	1 202	57.1
2,000 miles or more	–	–	–	–	–	–
Truck and water	**23**	**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	S	S	S	S	S	S
500 to 749 miles	–	–	–	–	–	–
750 to 999 miles	–	–	–	–	–	–
1,000 to 1,499 miles	–	–	–	–	–	–
1,500 to 1,999 miles	–	–	–	–	–	–
2,000 miles or more	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	**5**	**100.0**	**111**	**100.0**	**36**	**100.0**
Less than 50 miles	–	–	–	–	–	–
50 to 99 miles	–	–	–	–	–	–
100 to 249 miles	5	93.6	S	S	S	S
250 to 499 miles	S	S	S	S	S	S
500 to 749 miles	–	–	–	–	–	–
750 to 999 miles	–	–	–	–	–	–
1,000 to 1,499 miles	–	–	–	–	–	–
1,500 to 1,999 miles	–	–	–	–	–	–
2,000 miles or more	–	–	–	–	–	–
Other multiple modes	**S**	**S**	**S**	**S**	**S**	**S**
Less than 50 miles	–	–	–	–	–	–
50 to 99 miles	–	–	–	–	–	–
100 to 249 miles	–	–	–	–	–	–
250 to 499 miles	S	S	S	S	S	S
500 to 749 miles	–	–	–	–	–	–
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	**14 794**	**100.0**	**9 212**	**100.0**	**1 875**	**100.0**
Less than 50 miles	8 398	56.8	4 005	43.5	39	2.1
50 to 99 miles	820	5.5	S	S	S	S
100 to 249 miles	2 139	14.5	2 177	23.6	439	23.4
250 to 499 miles	893	6.0	850	9.2	390	20.8
500 to 749 miles	1 031	7.0	S	S	S	S
750 to 999 miles	605	4.1	S	S	S	S
1,000 to 1,499 miles	93	.6	13	.1	19	1.0
1,500 to 1,999 miles	S	S	62	.7	134	7.1
2,000 miles or more	–	–	–	–	–	–

– 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	**291 458**	**100.0**	**397 829**	**100.0**	**82 601**	**100.0**	**682**
Less than 50 lb	24 788	8.5	538	.1	268	.3	783
50 to 99 lb	5 681	1.9	368	–	101	.1	291
100 to 499 lb	20 157	6.9	1 950	.5	514	.6	257
500 to 749 lb	5 543	1.9	943	.2	242	.3	257
750 to 999 lb	6 058	2.1	908	.2	192	.2	210
1,000 to 9,999 lb	75 380	25.9	21 469	5.4	6 126	7.4	245
10,000 to 49,999 lb	124 551	42.7	197 883	49.7	28 980	35.1	157
50,000 to 99,999 lb	13 224	4.5	61 319	15.4	5 794	7.0	91
100,000 lb or more	16 076	5.5	112 451	28.3	40 383	48.9	504
Single modes	**244 448**	**100.0**	**382 357**	**100.0**	**74 388**	**100.0**	**150**
Less than 50 lb	7 462	3.1	200	–	25	–	95
50 to 99 lb	2 372	1.0	235	–	27	–	114
100 to 499 lb	15 825	6.5	1 732	.5	401	.5	213
500 to 749 lb	5 225	2.1	918	.2	226	.3	246
750 to 999 lb	4 598	1.9	874	.2	166	.2	190
1,000 to 9,999 lb	62 984	25.8	19 816	5.2	5 477	7.4	235
10,000 to 49,999 lb	118 346	48.4	194 501	50.9	27 177	36.5	149
50,000 to 99,999 lb	12 919	5.3	60 899	15.9	5 633	7.6	88
100,000 lb or more	14 718	6.0	103 181	27.0	35 256	47.4	502
Truck[2]	**225 612**	**100.0**	**291 532**	**100.0**	**41 147**	**100.0**	**136**
Less than 50 lb	6 546	2.9	197	–	20	–	68
50 to 99 lb	2 178	1.0	234	–	26	–	107
100 to 499 lb	15 207	6.7	1 724	.6	388	.9	207
500 to 749 lb	5 220	2.3	917	.3	224	.5	243
750 to 999 lb	4 567	2.0	873	.3	165	.4	189
1,000 to 9,999 lb	62 103	27.5	19 740	6.8	5 400	13.1	232
10,000 to 49,999 lb	116 932	51.8	193 395	66.3	26 708	64.9	147
50,000 to 99,999 lb	10 900	4.8	59 263	20.3	4 910	11.9	80
100,000 lb or more	1 958	.9	15 189	5.2	3 307	8.0	255
For-hire truck	**137 010**	**100.0**	**142 936**	**100.0**	**31 603**	**100.0**	**431**
Less than 50 lb	913	.7	21	–	12	–	478
50 to 99 lb	465	.3	25	–	16	–	606
100 to 499 lb	8 552	6.2	490	.3	298	.9	606
500 to 749 lb	3 301	2.4	316	.2	170	.5	540
750 to 999 lb	2 702	2.0	278	.2	129	.4	461
1,000 to 9,999 lb	38 967	28.4	7 852	5.5	4 423	14.0	546
10,000 to 49,999 lb	75 503	55.1	100 671	70.4	20 502	64.9	227
50,000 to 99,999 lb	5 360	3.9	26 323	18.4	3 145	10.0	112
100,000 lb or more	1 247	.9	6 961	4.9	2 909	9.2	439
Private truck	**88 383**	**100.0**	**147 908**	**100.0**	**9 445**	**100.0**	**53**
Less than 50 lb	S	S	176	.1	8	–	38
50 to 99 lb	1 712	1.9	208	.1	10	.1	48
100 to 499 lb	6 632	7.5	1 233	.8	89	.9	70
500 to 749 lb	1 910	2.2	601	.4	54	.6	89
750 to 999 lb	1 855	2.1	595	.4	35	.4	60
1,000 to 9,999 lb	23 130	26.2	11 886	8.0	978	10.3	72
10,000 to 49,999 lb	41 333	46.8	92 441	62.5	6 167	65.3	72
50,000 to 99,999 lb	5 482	6.2	32 653	22.1	1 723	18.2	53
100,000 lb or more	698	.8	8 114	5.5	381	4.0	59
Rail	**11 600**	**100.0**	**57 902**	**100.0**	**28 614**	**100.0**	**667**
Less than 50 lb	S	S	S	S	S	S	273
50 to 99 lb	–	–	–	–	–	–	–
100 to 499 lb	S	S	S	S	S	S	1 505
500 to 749 lb	S	S	S	S	S	S	1 992
750 to 999 lb	S	S	S	S	S	S	1 993
1,000 to 9,999 lb	S	S	71	.1	73	.3	1 081
10,000 to 49,999 lb	1 388	12.0	835	1.4	435	1.5	540
50,000 to 99,999 lb	S	S	1 636	2.8	723	2.5	S
100,000 lb or more	7 361	63.5	55 358	95.6	27 380	95.7	624
Water	**1 153**	**100.0**	**14 935**	**100.0**	**4 294**	**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	S	S	S	S	S	S	S
50,000 to 99,999 lb	–	–	–	–	–	–	–
100,000 lb or more	1 147	99.4	14 684	98.3	4 268	99.4	363
Shallow draft	**S**	**S**	**13 757**	**100.0**	**4 293**	**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	S	S	S	S	S	S	S
50,000 to 99,999 lb	–	–	–	–	–	–	–
100,000 lb or more	S	S	13 506	98.2	4 267	99.4	365

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	**S**	**S**	**S**	**S**	**S**	**S**	**1**
Less than 50 lb	–	–	–	–	–	–	–
50 to 99 lb	–	–	–	–	–	–	–
100 to 499 lb	–	–	–	–	–	–	–
500 to 749 lb	–	–	–	–	–	–	–
750 to 999 lb	–	–	–	–	–	–	–
1,000 to 9,999 lb	–	–	–	–	–	–	–
10,000 to 49,999 lb	–	–	–	–	–	–	–
50,000 to 99,999 lb	–	–	–	–	–	–	–
100,000 lb or more	S	S	S	S	S	S	1
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)	**S**	**S**	**S**	**S**	**S**	**S**	**1 465**
Less than 50 lb	S	S	3	1.3	4	1.8	1 476
50 to 99 lb	S	S	1	.6	2	.7	1 254
100 to 499 lb	S	S	7	2.6	11	4.4	1 554
500 to 749 lb	S	S	S	S	S	S	4 373
750 to 999 lb	S	S	S	S	S	S	1 815
1,000 to 9,999 lb	72	3.9	6	2.4	3	1.4	S
10,000 to 49,999 lb	S	S	S	S	S	S	788
50,000 to 99,999 lb	–	–	–	–	–	–	–
100,000 lb or more	S	S	S	S	S	S	984
Pipeline[3]	**S**	**S**	**S**	**S**	**S**	**S**	**S**
Less than 50 lb	S	S	S	S	S	S	S
50 to 99 lb	–	–	–	–	S	S	S
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	S	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	**32 216**	**100.0**	**6 260**	**100.0**	**6 338**	**100.0**	**897**
Less than 50 lb	16 042	49.8	326	5.2	242	3.8	904
50 to 99 lb	3 159	9.8	124	2.0	74	1.2	624
100 to 499 lb	4 111	12.8	188	3.0	111	1.8	602
500 to 749 lb	294	.9	21	.3	S	S	737
750 to 999 lb	S	S	27	.4	S	S	864
1,000 to 9,999 lb	S	S	S	S	S	S	1 287
10,000 to 49,999 lb	1 624	5.0	582	9.3	1 032	16.3	1 773
50,000 to 99,999 lb	S	S	S	S	S	S	2 218
100,000 lb or more	S	S	S	S	S	S	961
Parcel, U.S. Postal Service or courier	**24 999**	**100.0**	**682**	**100.0**	**461**	**100.0**	**896**
Less than 50 lb	16 042	64.2	326	47.8	242	52.6	904
50 to 99 lb	3 158	12.6	124	18.2	74	16.0	623
100 to 499 lb	4 099	16.4	186	27.3	109	23.6	594
500 to 749 lb	291	1.2	20	3.0	S	S	735
750 to 999 lb	S	S	26	3.8	S	S	807
1,000 to 9,999 lb	–	–	–	–	–	–	–
10,000 to 49,999 lb	–	–	–	–	–	–	–
50,000 to 99,999 lb	–	–	–	–	–	–	–
100,000 lb or more	–	–	–	–	–	–	–
Truck and rail	**6 343**	**100.0**	**1 938**	**100.0**	**2 105**	**100.0**	**1 340**
Less than 50 lb	–	–	–	–	–	–	–
50 to 99 lb	S	S	S	S	S	S	1 108
100 to 499 lb	S	S	S	S	S	S	1 052
500 to 749 lb	S	S	S	S	S	S	847
750 to 999 lb	S	S	S	S	S	S	1 113
1,000 to 9,999 lb	S	S	S	S	S	S	1 269
10,000 to 49,999 lb	1 614	25.4	575	29.7	1 031	49.0	1 791
50,000 to 99,999 lb	S	S	S	S	S	S	2 218
100,000 lb or more	S	S	S	S	S	S	1 067
Truck and water	**23**	**100.0**	**S**	**S**	**S**	**S**	**4 367**
Less than 50 lb	–	–	–	–	–	–	–
50 to 99 lb	–	–	–	–	–	–	–
100 to 499 lb	S	S	S	S	S	S	4 663
500 to 749 lb	S	S	S	S	S	S	209
750 to 999 lb	S	S	S	S	S	S	4 908
1,000 to 9,999 lb	S	S	S	S	S	S	4 533
10,000 to 49,999 lb	S	S	S	S	S	S	199
50,000 to 99,999 lb	–	–	–	–	–	–	–
100,000 lb or more	S	S	S	S	S	S	395

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	**5**	**100.0**	**111**	**100.0**	**36**	**100.0**	**303**
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	301
50,000 to 99,999 lb	–	–	–	–	–	–	–
100,000 lb or more	5	92.5	111	99.4	36	99.5	303
Other multiple modes	**S**	**S**	**S**	**S**	**S**	**S**	**1 050**
Less than 50 lb	–	–	–	–	–	–	–
50 to 99 lb	–	–	–	–	–	–	–
100 to 499 lb	–	–	–	–	–	–	–
500 to 749 lb	–	–	–	–	–	–	–
750 to 999 lb	–	–	–	–	–	–	–
1,000 to 9,999 lb	–	–	–	–	–	–	–
10,000 to 49,999 lb	–	–	–	–	–	–	–
50,000 to 99,999 lb	–	–	–	–	–	–	–
100,000 lb or more	S	S	S	S	S	S	1 050
Other and unknown modes	**14 794**	**100.0**	**9 212**	**100.0**	**1 875**	**100.0**	**116**
Less than 50 lb	1 284	8.7	12	.1	1	–	107
50 to 99 lb	150	1.0	9	–	–	–	37
100 to 499 lb	221	1.5	31	.3	1	–	40
500 to 749 lb	S	S	4	–	S	S	329
750 to 999 lb	43	.3	S	S	S	S	248
1,000 to 9,999 lb	7 929	53.6	1 261	13.7	153	8.2	149
10,000 to 49,999 lb	4 582	31.0	2 800	30.4	771	41.1	335
50,000 to 99,999 lb	S	S	360	3.9	S	S	86
100,000 lb or more	436	2.9	4 729	51.3	918	48.9	204

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

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

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

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

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

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

SCTG code	Commodity description	Value		Tons		Ton-miles[1]		Average miles per shipment
		2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
	Total[2]	**291 458**	**100.0**	**397 829**	**100.0**	**82 601**	**100.0**	**682**
01	Live animals and live fish	–	–	–	–	–	–	–
02	Cereal grains	1 948	.7	23 851	6.0	14 052	17.0	354
03	Other agricultural products	1 911	.7	7 175	1.8	2 807	3.4	158
04	Animal feed and products of animal origin, n.e.c.	811	.3	3 909	1.0	1 843	2.2	S
05	Meat, fish, seafood, and their preparations	1 774	.6	871	.2	285	.3	142
06	Milled grain products and preparations, and bakery products	S	S	S	S	S	S	S
07	Other prepared foodstuffs and fats and oils	12 356	4.2	16 106	4.0	4 385	5.3	S
08	Alcoholic beverages	276	–	303	–	22	–	64
09	Tobacco products	1 108	.4	16	–	1	–	39
10	Monumental or building stone	S	S	S	S	S	S	7
11	Natural sands	62	–	14 674	3.7	298	.4	15
12	Gravel and crushed stone	402	.1	72 710	18.3	2 391	2.9	18
13	Nonmetallic minerals n.e.c.	415	.1	S	S	S	S	S
14	Metallic ores and concentrates	73	–	66	–	23	–	319
15	Coal	477	.2	23 454	5.9	1 881	2.3	82
17	Gasoline and aviation turbine fuel	8 180	2.8	30 780	7.7	555	.7	29
18	Fuel oils	2 055	.7	8 596	2.2	368	.4	29
19	Coal and petroleum products, n.e.c.	3 406	1.2	30 766	7.7	3 750	4.5	96
20	Basic chemicals	2 354	.8	4 324	1.1	1 998	2.4	306
21	Pharmaceutical products	6 063	2.1	235	–	44	–	S
22	Fertilizers	1 065	.4	5 858	1.5	291	.4	S
23	Chemical products and preparations, n.e.c.	7 351	2.5	2 191	.6	1 022	1.2	199
24	Plastics and rubber	11 835	4.1	3 777	.9	1 618	2.0	311
25	Logs and other wood in the rough	S	S	S	S	S	S	949
26	Wood products	3 877	1.3	6 338	1.6	1 655	2.0	110
27	Pulp, newsprint, paper, and paperboard	S	S	S	S	S	S	337
28	Paper or paperboard articles	2 857	1.0	S	S	387	.5	161
29	Printed products	3 211	1.1	1 018	.3	390	.5	717
30	Textiles, leather, and articles of textiles or leather	10 962	3.8	649	.2	345	.4	868
31	Nonmetallic mineral products	3 369	1.2	31 966	8.0	2 723	3.3	S
32	Base metal in primary or semifinished forms and in finished basic shapes	23 253	8.0	42 478	10.7	18 254	22.1	232
33	Articles of base metal	8 328	2.9	3 100	.8	S	S	531
34	Machinery	30 097	10.3	3 524	.9	2 231	2.7	421
35	Electronic and other electrical equipment and components and office equipment	23 158	7.9	1 611	.4	908	1.1	867
36	Motorized and other vehicles (including parts)	56 621	19.4	12 158	3.1	4 977	6.0	243
37	Transportation equipment, n.e.c.	S	S	S	S	S	S	688
38	Precision instruments and apparatus	4 145	1.4	34	–	19	–	741
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	4 678	1.6	667	.2	297	.4	572
40	Miscellaneous manufactured products	12 558	4.3	2 838	.7	1 457	1.8	554
41	Waste and scrap	1 483	.5	9 883	2.5	2 080	2.5	120
43	Mixed freight	29 361	10.1	8 782	2.2	1 633	2.0	162
--	Commodity unknown	371	.1	S	S	27	–	S

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

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

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	–	.3	–	S
02	Cereal grains	.7	.6	6.0	3.6	17.0	8.4
03	Other agricultural products	.7	1.1	1.8	2.2	3.4	5.1
04	Animal feed and products of animal origin, n.e.c	.3	1.1	1.0	2.0	2.2	2.8
05	Meat, fish, seafood, and their preparations	.6	1.0	.2	.3	.3	.6
06	Milled grain products and preparations, and bakery products	S	2.2	S	1.1	S	3.6
07	Other prepared foodstuffs and fats and oils	4.2	3.6	4.0	3.8	5.3	7.1
08	Alcoholic beverages	–	.6	–	.4	–	S
09	Tobacco products	.4	.3	–	–	–	–
10	Monumental or building stone	S	–	S	.2	S	.2
11	Natural sands	–	–	3.7	2.0	.4	.6
12	Gravel and crushed stone	.1	.2	18.3	24.0	2.9	5.2
13	Nonmetallic minerals n.e.c.	.1	.1	S	2.2	S	1.0
14	Metallic ores and concentrates	–	S	–	S	–	S
15	Coal	.2	.3	5.9	7.2	2.3	4.2
17	Gasoline and aviation turbine fuel	2.8	2.2	7.7	5.9	.7	1.7
18	Fuel oils	.7	1.3	2.2	4.2	.4	1.1
19	Coal and petroleum products, n.e.c.	1.2	1.5	7.7	7.9	4.5	S
20	Basic chemicals	.8	.8	1.1	2.3	2.4	1.9
21	Pharmaceutical products	2.1	5.1	–	–	–	–
22	Fertilizers	.4	.3	1.5	.8	.4	.2
23	Chemical products and preparations, n.e.c.	2.5	1.3	.6	.4	1.2	.8
24	Plastics and rubber	4.1	3.6	.9	.7	2.0	1.6
25	Logs and other wood in the rough	S	–	S	S	S	.1
26	Wood products	1.3	1.4	1.6	.9	2.0	1.3
27	Pulp, newsprint, paper, and paperboard	S	.5	S	.4	S	.6
28	Paper or paperboard articles	1.0	.9	S	.5	.5	.9
29	Printed products	1.1	5.2	.3	.5	.5	1.7
30	Textiles, leather, and articles of textiles or leather	3.8	2.9	.2	.1	.4	.3
31	Nonmetallic mineral products	1.2	1.6	8.0	5.6	3.3	4.5
32	Base metal in primary or semifinished forms and in finished basic shapes	8.0	11.2	10.7	11.5	22.1	24.5
33	Articles of base metal	2.9	3.1	.8	.9	S	2.1
34	Machinery	10.3	8.2	.9	.8	2.7	2.0
35	Electronic and other electrical equipment and components and office equipment	7.9	8.4	.4	.6	1.1	2.0
36	Motorized and other vehicles (including parts)	19.4	16.4	3.1	2.5	6.0	5.2
37	Transportation equipment, n.e.c.	S	1.1	S	S	S	S
38	Precision instruments and apparatus	1.4	1.5	–	–	–	–
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	1.6	1.8	.2	.2	.4	.6
40	Miscellaneous manufactured products	4.3	5.9	.7	.9	1.8	1.9
41	Waste and scrap	.5	.7	2.5	2.5	2.5	2.2
43	Mixed freight	10.1	.6	2.2	.1	2.0	–
--	Commodity unknown	.1	S	S	.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]	**291 458**	**100.0**	**397 829**	**100.0**	**82 601**	**100.0**	**682**
Single modes	**244 448**	**83.9**	**382 357**	**96.1**	**74 388**	**90.1**	**150**
Truck[3]	225 612	77.4	291 532	73.3	41 147	49.8	136
For-hire truck	137 010	47.0	142 936	35.9	31 603	38.3	431
Private truck	88 383	30.3	147 908	37.2	9 445	11.4	53
Rail	11 600	4.0	57 902	14.6	28 614	34.6	667
Water	1 153	.4	14 935	3.8	4 294	5.2	S
Shallow draft	S	S	13 757	3.5	4 293	5.2	S
Great Lakes	S	S	S	S	S	S	1
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	1 465
Pipeline[4]	S	S	S	S	S	S	S
Multiple modes	**32 216**	**11.1**	**6 260**	**1.6**	**6 338**	**7.7**	**897**
Parcel, U.S. Postal Service or courier	24 999	8.6	682	.2	461	.6	896
Truck and rail	6 343	2.2	1 938	.5	2 105	2.5	1 340
Truck and water	23	–	S	S	S	S	4 367
Rail and water	5	–	111	–	36	–	303
Other multiple modes	S	S	S	S	S	S	1 050
Other and unknown modes	**14 794**	**5.1**	**9 212**	**2.3**	**1 875**	**2.3**	**116**
SCTG 01, LIVE ANIMALS AND LIVE FISH							
Total	**–**	**–**	**–**	**–**	**–**	**–**	**–**
Single modes	**–**	**–**	**–**	**–**	**–**	**–**	**–**
Truck[3]	–	–	–	–	–	–	–
For-hire truck	–	–	–	–	–	–	–
Private truck	–	–	–	–	–	–	–
Rail	–	–	–	–	–	–	–
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**–**	**–**	**–**	**–**	**–**	**–**	**–**
Parcel, U.S. Postal Service or courier	–	–	–	–	–	–	–
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**–**	**–**	**–**	**–**	**–**	**–**	**–**
SCTG 02, CEREAL GRAINS							
Total	**1 948**	**100.0**	**23 851**	**100.0**	**14 052**	**100.0**	**354**
Single modes	**1 888**	**96.9**	**23 131**	**97.0**	**13 676**	**97.3**	**352**
Truck[3]	58	3.0	547	2.3	55	.4	S
For-hire truck	37	1.9	375	1.6	33	.2	93
Private truck	S	S	S	S	S	S	S
Rail	1 578	81.0	19 508	81.8	11 812	84.1	671
Water	238	12.2	2 860	12.0	1 595	11.4	907
Shallow draft	144	7.4	1 682	7.1	1 594	11.3	946
Great Lakes	S	S	S	S	S	S	1
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	984
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**	**516**

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	**1 911**	**100.0**	**7 175**	**100.0**	**2 807**	**100.0**	**158**
Single modes	**1 905**	**99.7**	**7 145**	**99.6**	**2 807**	**100.0**	**158**
Truck[3]	1 401	73.3	4 225	58.9	370	13.2	156
For-hire truck	835	43.7	S	S	S	S	250
Private truck	566	29.6	S	S	93	3.3	S
Rail	287	15.0	1 685	23.5	1 204	42.9	375
Water	217	11.3	1 235	17.2	1 233	43.9	992
Shallow draft	217	11.3	1 235	17.2	1 233	43.9	992
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**–**	**–**	**–**	**–**	**–**	**–**	**–**
Parcel, U.S. Postal Service or courier	–	–	–	–	–	–	–
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**20**
SCTG 04, ANIMAL FEED AND PRODUCTS OF ANIMAL ORIGIN, N.E.C.							
Total	**811**	**100.0**	**3 909**	**100.0**	**1 843**	**100.0**	**S**
Single modes	**805**	**99.3**	**3 833**	**98.1**	**1 820**	**98.8**	**S**
Truck[3]	620	76.4	2 326	59.5	259	14.1	S
For-hire truck	416	51.3	1 206	30.8	178	9.7	135
Private truck	204	25.1	1 120	28.7	82	4.4	S
Rail	170	20.9	1 342	34.3	1 372	74.5	1 029
Water	16	1.9	166	4.2	188	10.2	1 137
Shallow draft	16	1.9	166	4.2	188	10.2	1 137
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**5**	**.6**	**S**	**S**	**S**	**S**	**301**
Parcel, U.S. Postal Service or courier	–	–	–	–	–	–	–
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	5	.6	S	S	S	S	301
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**172**
SCTG 05, MEAT, FISH, SEAFOOD, AND THEIR PREPARATIONS							
Total	**1 774**	**100.0**	**871**	**100.0**	**285**	**100.0**	**142**
Single modes	**1 774**	**100.0**	**871**	**100.0**	**285**	**100.0**	**142**
Truck[3]	1 774	100.0	871	100.0	285	100.0	142
For-hire truck	S	S	364	41.7	195	68.4	437
Private truck	S	S	S	S	S	S	116
Rail	–	–	–	–	–	–	–
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**–**	**–**	**–**	**–**	**–**	**–**	**–**
Parcel, U.S. Postal Service or courier	–	–	–	–	–	–	–
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**7**

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**	**S**	**S**	**S**	**S**	**S**
Single modes	**4 268**	**96.7**	**S**	**S**	**1 696**	**87.5**	**S**
Truck[3]	S	S	S	S	S	S	S
For-hire truck	1 837	41.6	S	S	S	S	199
Private truck	S	S	S	S	S	S	46
Rail	182	4.1	834	12.4	617	31.8	718
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	191
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**S**	**S**	**S**	**S**	**S**	**S**	**1 425**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	693
Truck and rail	S	S	S	S	S	S	1 684
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**210**
SCTG 07, OTHER PREPARED FOODSTUFFS AND FATS AND OILS							
Total	**12 356**	**100.0**	**16 106**	**100.0**	**4 385**	**100.0**	**S**
Single modes	**12 296**	**99.5**	**16 004**	**99.4**	**4 190**	**95.6**	**S**
Truck[3]	11 849	95.9	14 027	87.1	2 860	65.2	S
For-hire truck	7 904	64.0	7 598	47.2	2 535	57.8	268
Private truck	3 911	31.7	6 322	39.3	313	7.1	43
Rail	447	3.6	1 977	12.3	1 330	30.3	498
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**47**	**.4**	**S**	**S**	**S**	**S**	**956**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	433
Truck and rail	46	.4	S	S	S	S	1 596
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**89**
SCTG 08, ALCOHOLIC BEVERAGES							
Total	**276**	**100.0**	**303**	**100.0**	**22**	**100.0**	**64**
Single modes	**276**	**100.0**	**303**	**100.0**	**22**	**100.0**	**64**
Truck[3]	276	100.0	303	100.0	22	100.0	64
For-hire truck	S	S	S	S	S	S	69
Private truck	180	65.0	45	14.8	S	S	64
Rail	–	–	–	–	–	–	–
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**–**	**–**	**–**	**–**	**–**	**–**	**–**
Parcel, U.S. Postal Service or courier	–	–	–	–	–	–	–
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**–**	**–**	**–**	**–**	**–**	**–**	**–**

See footnotes at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles[1]		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
SCTG 09, TOBACCO PRODUCTS							
Total	**1 108**	**100.0**	**16**	**100.0**	**1**	**100.0**	**39**
Single modes	**1 108**	**100.0**	**16**	**100.0**	**1**	**100.0**	**39**
Truck[3]	1 108	100.0	16	100.0	1	100.0	39
For-hire truck	–	–	–	–	–	–	–
Private truck	1 108	100.0	16	100.0	1	100.0	39
Rail	–	–	–	–	–	–	–
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**–**	**–**	**–**	**–**	**–**	**–**	**–**
Parcel, U.S. Postal Service or courier	–	–	–	–	–	–	–
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**–**	**–**	**–**	**–**	**–**	**–**	**–**
SCTG 10, MONUMENTAL OR BUILDING STONE							
Total	**S**	**S**	**S**	**S**	**S**	**S**	**7**
Single modes	**S**	**S**	**S**	**S**	**S**	**S**	**7**
Truck[3]	S	S	S	S	S	S	7
For-hire truck	–	–	–	–	–	–	–
Private truck	S	S	S	S	S	S	7
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	**62**	**100.0**	**14 674**	**100.0**	**298**	**100.0**	**15**
Single modes	**62**	**99.9**	**14 666**	**100.0**	**298**	**100.0**	**15**
Truck[3]	62	99.9	14 666	100.0	298	100.0	15
For-hire truck	S	S	S	S	154	51.5	S
Private truck	38	60.7	S	S	145	48.5	10
Rail	–	–	–	–	–	–	–
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**–**	**–**	**–**	**–**	**–**	**–**	**–**
Parcel, U.S. Postal Service or courier	–	–	–	–	–	–	–
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**5**

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	**402**	**100.0**	**72 710**	**100.0**	**2 391**	**100.0**	**18**
Single modes	**396**	**98.5**	**72 218**	**99.3**	**2 331**	**97.5**	**18**
Truck[3]	374	93.0	68 561	94.3	1 486	62.1	18
For-hire truck	175	43.6	S	S	690	28.9	18
Private truck	199	49.4	35 154	48.3	794	33.2	18
Rail	–	–	–	–	–	–	–
Water	22	5.6	3 657	5.0	845	35.3	S
Shallow draft	22	5.6	3 657	5.0	845	35.3	S
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**S**	**S**	**S**	**S**	**S**	**S**	**387**
Parcel, U.S. Postal Service or courier	–	–	–	–	–	–	–
Truck and rail	–	–	–	–	–	–	–
Truck and water	S	S	S	S	S	S	395
Rail and water	S	S	S	S	S	S	367
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**7**
SCTG 13, NONMETALLIC MINERALS N.E.C.							
Total	**415**	**100.0**	**S**	**S**	**S**	**S**	**S**
Single modes	**S**	**S**	**S**	**S**	**S**	**S**	**S**
Truck[3]	S	S	S	S	S	S	S
For-hire truck	S	S	S	S	S	S	S
Private truck	S	S	S	S	S	S	45
Rail	–	–	–	–	–	–	–
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	1 009
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**S**	**S**	**S**	**S**	**S**	**S**	**268**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	268
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	**73**	**100.0**	**66**	**100.0**	**23**	**100.0**	**319**
Single modes	**72**	**98.9**	**65**	**99.0**	**23**	**99.7**	**318**
Truck[3]	72	98.9	65	99.0	23	99.7	318
For-hire truck	72	98.6	65	99.0	23	99.7	335
Private truck	S	S	S	S	S	S	47
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**	**396**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	396
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**119**

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	**477**	**100.0**	**23 454**	**100.0**	**1 881**	**100.0**	**82**
Single modes	**418**	**87.5**	**20 711**	**88.3**	**1 340**	**71.3**	**81**
Truck[3]	174	36.5	8 564	36.5	S	S	82
For-hire truck	156	32.7	7 703	32.8	S	S	82
Private truck	S	S	S	S	S	S	43
Rail	244	51.1	12 147	51.8	694	36.9	60
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**	**236**
Parcel, U.S. Postal Service or courier	–	–	–	–	–	–	–
Truck and rail	S	S	S	S	S	S	236
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**109**
SCTG 17, GASOLINE AND AVIATION TURBINE FUEL							
Total	**8 180**	**100.0**	**30 780**	**100.0**	**555**	**100.0**	**29**
Single modes	**8 180**	**100.0**	**30 780**	**100.0**	**555**	**100.0**	**29**
Truck[3]	4 198	51.3	14 265	46.3	500	90.1	29
For-hire truck	1 422	17.4	4 817	15.6	171	30.9	S
Private truck	2 768	33.8	9 427	30.6	328	59.2	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	**–**	**–**	**–**	**–**	**–**	**–**	**–**
SCTG 18, FUEL OILS							
Total	**2 055**	**100.0**	**8 596**	**100.0**	**368**	**100.0**	**29**
Single modes	**2 055**	**100.0**	**8 596**	**100.0**	**368**	**100.0**	**29**
Truck[3]	1 799	87.6	7 372	85.8	329	89.2	29
For-hire truck	463	22.5	1 732	20.1	83	22.6	48
Private truck	1 337	65.0	S	S	245	66.6	27
Rail	S	S	S	S	S	S	1 127
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	**–**	**–**	**–**	**–**	**–**	**–**	**–**

See footnotes at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles[1]		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
SCTG 19, COAL AND PETROLEUM PRODUCTS, N.E.C.							
Total	**3 406**	**100.0**	**30 766**	**100.0**	**3 750**	**100.0**	**96**
Single modes	**3 064**	**90.0**	**28 288**	**91.9**	**3 640**	**97.1**	**97**
Truck[3]	2 045	60.0	19 531	63.5	1 687	45.0	80
For-hire truck	1 172	34.4	S	S	1 053	28.1	S
Private truck	S	S	S	S	S	S	S
Rail	440	12.9	2 512	8.2	S	S	728
Water	S	S	S	S	S	S	1
Shallow draft	S	S	S	S	S	S	1
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	296
Pipeline[4]	S	S	S	S	S	S	S
Multiple modes	**S**	**S**	**S**	**S**	**S**	**S**	**S**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	S
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**81**
SCTG 20, BASIC CHEMICALS							
Total	**2 354**	**100.0**	**4 324**	**100.0**	**1 998**	**100.0**	**306**
Single modes	**2 022**	**85.9**	**4 297**	**99.4**	**1 983**	**99.2**	**306**
Truck[3]	1 051	44.6	S	S	S	S	272
For-hire truck	S	S	813	18.8	S	S	708
Private truck	355	15.1	S	S	S	S	88
Rail	968	41.1	1 987	46.0	S	S	S
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	1 886
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
Truck and rail	S	S	S	S	S	S	454
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**359**
SCTG 21, PHARMACEUTICAL PRODUCTS							
Total	**6 063**	**100.0**	**235**	**100.0**	**44**	**100.0**	**S**
Single modes	**2 193**	**36.2**	**215**	**91.5**	**S**	**S**	**S**
Truck[3]	2 180	36.0	215	91.4	S	S	S
For-hire truck	1 952	32.2	S	S	S	S	323
Private truck	S	S	S	S	S	S	S
Rail	–	–	–	–	–	–	–
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	3 996
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**3 856**	**63.6**	**20**	**8.5**	**7**	**16.5**	**363**
Parcel, U.S. Postal Service or courier	3 856	63.6	20	8.5	7	16.5	363
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**200**

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	**1 065**	**100.0**	**5 858**	**100.0**	**291**	**100.0**	**S**
Single modes	**1 063**	**99.8**	**5 849**	**99.8**	**285**	**97.8**	**S**
Truck[3]	1 003	94.1	5 305	90.6	S	S	S
For-hire truck	S	S	S	S	S	S	159
Private truck	1 000	93.9	5 283	90.2	S	S	S
Rail	S	S	S	S	S	S	623
Water	S	S	S	S	S	S	232
Shallow draft	S	S	S	S	S	S	232
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**	**534**
SCTG 23, CHEMICAL PRODUCTS AND PREPARATIONS, N.E.C.							
Total	**7 351**	**100.0**	**2 191**	**100.0**	**1 022**	**100.0**	**199**
Single modes	**6 509**	**88.5**	**2 104**	**96.0**	**961**	**93.9**	**S**
Truck[3]	6 467	88.0	2 063	94.2	868	84.9	S
For-hire truck	5 403	73.5	S	S	S	S	417
Private truck	1 065	14.5	S	S	S	S	S
Rail	S	S	S	S	S	S	2 270
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	–	–	S	S	1 455
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**S**	**S**	**S**	**S**	**3**	**.3**	**S**
Parcel, U.S. Postal Service or courier	S	S	S	S	3	.3	S
Truck and rail	–	–	–	–	–	–	–
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	**11 835**	**100.0**	**3 777**	**100.0**	**1 618**	**100.0**	**311**
Single modes	**11 069**	**93.5**	**3 497**	**92.6**	**1 437**	**88.8**	**234**
Truck[3]	10 985	92.8	3 472	91.9	1 423	88.0	232
For-hire truck	8 059	68.1	2 779	73.6	1 302	80.5	495
Private truck	2 926	24.7	692	18.3	121	7.5	S
Rail	S	S	S	S	S	S	607
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	622
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**444**	**3.7**	**59**	**1.6**	**50**	**3.1**	**540**
Parcel, U.S. Postal Service or courier	408	3.4	46	1.2	24	1.5	539
Truck and rail	S	S	13	.3	27	1.7	1 902
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**197**

See footnotes at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles[1]		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
SCTG 25, LOGS AND OTHER WOOD IN THE ROUGH							
Total	**S**	**S**	**S**	**S**	**S**	**S**	**949**
Single modes	**S**	**S**	**S**	**S**	**S**	**S**	**952**
Truck[3]	S	S	S	S	S	S	952
For-hire truck	S	S	S	S	S	S	1 432
Private truck	S	S	S	S	S	S	54
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**	**914**
Parcel, U.S. Postal Service or courier	–	–	–	–	–	–	–
Truck and rail	S	S	S	S	S	S	914
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**–**	**–**	**–**	**–**	**–**	**–**	**–**
SCTG 26, WOOD PRODUCTS							
Total	**3 877**	**100.0**	**6 338**	**100.0**	**1 655**	**100.0**	**110**
Single modes	**3 703**	**95.5**	**6 153**	**97.1**	**1 405**	**84.9**	**106**
Truck[3]	3 703	95.5	6 153	97.1	1 405	84.9	106
For-hire truck	1 836	47.4	2 968	46.8	1 236	74.7	421
Private truck	1 859	48.0	3 183	50.2	168	10.1	52
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**	**983**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	S
Truck and rail	S	S	S	S	S	S	2 097
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**89**
SCTG 27, PULP, NEWSPRINT, PAPER, AND PAPERBOARD							
Total	**S**	**S**	**S**	**S**	**S**	**S**	**337**
Single modes	**S**	**S**	**S**	**S**	**S**	**S**	**304**
Truck[3]	S	S	S	S	S	S	301
For-hire truck	627	45.8	459	24.6	S	S	488
Private truck	S	S	S	S	S	S	122
Rail	16	1.2	47	2.5	35	4.9	759
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	1 560
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**S**	**S**	**S**	**S**	**S**	**S**	**584**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	584
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 28, PAPER OR PAPERBOARD ARTICLES							
Total	**2 857**	**100.0**	**S**	**S**	**387**	**100.0**	**161**
Single modes	**2 755**	**96.4**	**S**	**S**	**312**	**80.8**	**127**
Truck[3]	2 740	95.9	S	S	310	80.3	127
For-hire truck	1 260	44.1	994	40.6	266	68.9	374
Private truck	S	S	S	S	44	11.4	S
Rail	S	S	S	S	S	S	240
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	3 032
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**S**	**S**	**S**	**S**	**S**	**S**	**746**
Parcel, U.S. Postal Service or courier	14	.5	S	S	S	S	675
Truck and rail	S	S	S	S	S	S	2 253
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**8**
SCTG 29, PRINTED PRODUCTS							
Total	**3 211**	**100.0**	**1 018**	**100.0**	**390**	**100.0**	**717**
Single modes	**2 088**	**65.0**	**939**	**92.3**	**338**	**86.7**	**382**
Truck[3]	2 043	63.6	931	91.4	329	84.4	308
For-hire truck	1 593	49.6	615	60.4	317	81.3	618
Private truck	S	S	S	S	S	S	S
Rail	S	S	S	S	S	S	1 687
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	1 120
Pipeline[4]	S	S	S	S	S	S	S
Multiple modes	**1 027**	**32.0**	**45**	**4.4**	**37**	**9.5**	**846**
Parcel, U.S. Postal Service or courier	1 016	31.6	43	4.2	31	7.9	846
Truck and rail	S	S	S	S	S	S	2 359
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**96**	**3.0**	**S**	**S**	**S**	**S**	**217**
SCTG 30, TEXTILES, LEATHER, AND ARTICLES OF TEXTILES OR LEATHER							
Total	**10 962**	**100.0**	**649**	**100.0**	**345**	**100.0**	**868**
Single modes	**7 631**	**69.6**	**526**	**81.2**	**244**	**70.8**	**290**
Truck[3]	7 626	69.6	526	81.2	244	70.7	187
For-hire truck	5 284	48.2	296	45.6	189	54.9	524
Private truck	S	S	231	35.6	S	S	S
Rail	–	–	–	–	–	–	–
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	1 790
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**3 268**	**29.8**	**120**	**18.6**	**101**	**29.2**	**875**
Parcel, U.S. Postal Service or courier	3 268	29.8	120	18.6	101	29.2	875
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**S**

See footnotes at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles[1]		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
SCTG 31, NONMETALLIC MINERAL PRODUCTS							
Total	**3 369**	**100.0**	**31 966**	**100.0**	**2 723**	**100.0**	**S**
Single modes	**3 349**	**99.4**	**31 894**	**99.8**	**2 699**	**99.1**	**S**
Truck[3]	3 276	97.3	31 314	98.0	2 430	89.3	S
For-hire truck	2 012	59.7	5 141	16.1	1 647	60.5	370
Private truck	1 264	37.5	26 173	81.9	783	28.7	S
Rail	61	1.8	578	1.8	268	9.8	638
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	407
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**13**	**.4**	**S**	**S**	**S**	**S**	**528**
Parcel, U.S. Postal Service or courier	3	–	–	–	–	–	506
Truck and rail	S	S	S	S	S	S	1 297
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**64**
SCTG 32, BASE METAL IN PRIMARY OR SEMIFINISHED FORMS AND IN FINISHED BASIC SHAPES							
Total	**23 253**	**100.0**	**42 478**	**100.0**	**18 254**	**100.0**	**232**
Single modes	**21 961**	**94.4**	**38 770**	**91.3**	**14 809**	**81.1**	**207**
Truck[3]	19 165	82.4	29 299	69.0	8 417	46.1	191
For-hire truck	13 266	57.1	19 569	46.1	6 446	35.3	375
Private truck	5 899	25.4	9 730	22.9	1 971	10.8	105
Rail	2 789	12.0	9 453	22.3	6 367	34.9	692
Water	S	S	S	S	S	S	1 360
Shallow draft	S	S	S	S	S	S	1 360
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	784
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**S**	**S**	**S**	**S**	**S**	**S**	**506**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	501
Truck and rail	S	S	S	S	S	S	2 346
Truck and water	S	S	S	S	S	S	200
Rail and water	–	–	–	–	–	–	–
Other multiple modes	S	S	S	S	S	S	1 097
Other and unknown modes	**312**	**1.3**	**806**	**1.9**	**S**	**S**	**89**
SCTG 33, ARTICLES OF BASE METAL							
Total	**8 328**	**100.0**	**3 100**	**100.0**	**S**	**S**	**531**
Single modes	**7 049**	**84.6**	**2 840**	**91.6**	**S**	**S**	**396**
Truck[3]	7 030	84.4	2 834	91.4	S	S	384
For-hire truck	6 072	72.9	2 348	75.7	S	S	633
Private truck	958	11.5	486	15.7	76	5.3	132
Rail	S	S	S	S	S	S	1 291
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	2	.1	1 027
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**S**	**S**	**40**	**1.3**	**S**	**S**	**751**
Parcel, U.S. Postal Service or courier	S	S	24	.8	S	S	747
Truck and rail	S	S	S	S	S	S	2 197
Truck and water	S	S	S	S	S	S	4 513
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**165**

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	**30 097**	**100.0**	**3 524**	**100.0**	**2 231**	**100.0**	**421**
Single modes	**26 900**	**89.4**	**3 047**	**86.5**	**1 873**	**84.0**	**299**
Truck[3]	26 325	87.5	2 969	84.2	1 805	80.9	249
For-hire truck	20 700	68.8	2 199	62.4	1 305	58.5	526
Private truck	5 605	18.6	722	20.5	S	S	88
Rail	378	1.3	76	2.1	64	2.9	829
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	197	.7	3	–	3	.2	1 663
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**2 416**	**8.0**	**127**	**3.6**	**137**	**6.1**	**527**
Parcel, U.S. Postal Service or courier	1 967	6.5	62	1.8	35	1.6	526
Truck and rail	S	S	S	S	S	S	1 482
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**132**
SCTG 35, ELECTRONIC AND OTHER ELECTRICAL EQUIPMENT AND COMPONENTS AND OFFICE EQUIPMENT							
Total	**23 158**	**100.0**	**1 611**	**100.0**	**908**	**100.0**	**867**
Single modes	**13 212**	**57.1**	**1 277**	**79.3**	**449**	**49.5**	**S**
Truck[3]	12 326	53.2	1 274	79.1	441	48.6	S
For-hire truck	5 060	21.9	676	42.0	304	33.5	768
Private truck	S	S	598	37.1	S	S	32
Rail	–	–	–	–	–	–	–
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	3	.2	8	.9	1 682
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**8 873**	**38.3**	**311**	**19.3**	**450**	**49.5**	**972**
Parcel, U.S. Postal Service or courier	8 333	36.0	149	9.2	134	14.8	972
Truck and rail	537	2.3	162	10.1	314	34.5	1 951
Truck and water	S	S	S	S	S	S	4 785
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**23**	**1.4**	**S**	**S**	**326**
SCTG 36, MOTORIZED AND OTHER VEHICLES (INCLUDING PARTS)							
Total	**56 621**	**100.0**	**12 158**	**100.0**	**4 977**	**100.0**	**243**
Single modes	**41 388**	**73.1**	**10 426**	**85.7**	**4 164**	**83.7**	**218**
Truck[3]	38 005	67.1	8 978	73.8	3 524	70.8	207
For-hire truck	26 361	46.6	6 582	54.1	3 056	61.4	509
Private truck	11 638	20.6	2 393	19.7	468	9.4	S
Rail	3 347	5.9	1 446	11.9	638	12.8	644
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	1	–	2	–	1 258
Pipeline[4]	S	S	S	S	S	S	S
Multiple modes	**5 446**	**9.6**	**499**	**4.1**	**571**	**11.5**	**382**
Parcel, U.S. Postal Service or courier	726	1.3	S	S	24	.5	325
Truck and rail	4 712	8.3	430	3.5	545	10.9	1 270
Truck and water	S	S	S	S	S	S	4 730
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**9 787**	**17.3**	**1 234**	**10.1**	**241**	**4.8**	**54**

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**	**688**
Single modes	**S**	**S**	**S**	**S**	**S**	**S**	**422**
Truck[3]	S	S	S	S	S	S	317
For-hire truck	S	S	S	S	S	S	379
Private truck	S	S	S	S	S	S	212
Rail	S	S	S	S	S	S	530
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	1 958
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**S**	**S**	**S**	**S**	**S**	**S**	**900**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	900
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**7**
SCTG 38, PRECISION INSTRUMENTS AND APPARATUS							
Total	**4 145**	**100.0**	**34**	**100.0**	**19**	**100.0**	**741**
Single modes	**1 714**	**41.3**	**24**	**69.7**	**S**	**S**	**420**
Truck[3]	1 198	28.9	23	67.2	S	S	S
For-hire truck	1 111	26.8	22	63.7	S	S	S
Private truck	S	S	S	S	S	S	S
Rail	–	–	–	–	–	–	–
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	1 287
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**2 348**	**56.6**	**8**	**24.4**	**6**	**32.4**	**777**
Parcel, U.S. Postal Service or courier	2 348	56.6	8	24.4	6	32.4	777
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**604**
SCTG 39, FURNITURE, MATTRESSES AND MATTRESS SUPPORTS, LAMPS, LIGHTING FITTINGS, AND ILLUMINATED SIGNS							
Total	**4 678**	**100.0**	**667**	**100.0**	**297**	**100.0**	**572**
Single modes	**4 580**	**97.9**	**660**	**99.0**	**291**	**97.8**	**518**
Truck[3]	4 556	97.4	658	98.6	288	96.8	500
For-hire truck	1 891	40.4	354	53.1	238	80.1	689
Private truck	2 665	57.0	304	45.6	49	16.6	224
Rail	S	S	S	S	S	S	1 398
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	865
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**97**	**2.1**	**S**	**S**	**S**	**S**	**764**
Parcel, U.S. Postal Service or courier	70	1.5	3	.5	3	.9	725
Truck and rail	S	S	S	S	S	S	1 024
Truck and water	S	S	S	S	S	S	4 643
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**14**

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	**12 558**	**100.0**	**2 838**	**100.0**	**1 457**	**100.0**	**554**
Single modes	**11 512**	**91.7**	**2 717**	**95.7**	**1 399**	**96.0**	**413**
Truck[3]	11 488	91.5	2 711	95.5	1 392	95.5	387
For-hire truck	8 519	67.8	2 062	72.7	1 265	86.8	670
Private truck	2 968	23.6	649	22.9	127	8.7	S
Rail	S	S	S	S	S	S	1 123
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	9	–	S	S	S	S	1 261
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**847**	**6.7**	**62**	**2.2**	**S**	**S**	**667**
Parcel, U.S. Postal Service or courier	847	6.7	62	2.2	S	S	667
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**S**
SCTG 41, WASTE AND SCRAP							
Total	**1 483**	**100.0**	**9 883**	**100.0**	**2 080**	**100.0**	**120**
Single modes	**1 411**	**95.2**	**9 229**	**93.4**	**1 669**	**80.2**	**119**
Truck[3]	1 070	72.1	5 098	51.6	492	23.6	98
For-hire truck	823	55.5	3 680	37.2	383	18.4	110
Private truck	S	S	S	S	S	S	78
Rail	319	21.5	3 840	38.9	S	S	S
Water	S	S	S	S	S	S	985
Shallow draft	S	S	S	S	S	S	985
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**S**	**S**	**S**	**S**	**S**	**S**	**764**
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	764
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**2**
SCTG 43, MIXED FREIGHT							
Total	**29 361**	**100.0**	**8 782**	**100.0**	**1 633**	**100.0**	**162**
Single modes	**28 501**	**97.1**	**8 664**	**98.7**	**1 611**	**98.7**	**83**
Truck[3]	28 468	97.0	8 659	98.6	1 605	98.3	78
For-hire truck	6 446	22.0	2 390	27.2	762	46.7	383
Private truck	21 973	74.8	6 266	71.4	843	51.6	54
Rail	S	S	S	S	S	S	1 123
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	2 000
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**671**	**2.3**	**37**	**.4**	**16**	**1.0**	**468**
Parcel, U.S. Postal Service or courier	671	2.3	37	.4	16	1.0	468
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**5**	**.3**	**S**

See footnotes at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles[1]		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
COMMODITY UNKNOWN							
Total	**371**	**100.0**	**S**	**S**	**27**	**100.0**	**S**
Single modes	**296**	**79.9**	**S**	**S**	**24**	**90.0**	**S**
Truck[3]	282	76.2	S	S	16	61.5	S
For-hire truck	S	S	S	S	12	45.8	478
Private truck	S	S	15	11.8	4	15.7	S
Rail	S	S	S	S	S	S	889
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	985
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**S**	**S**	**S**	**S**	**S**	**S**	**690**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	690
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**S**

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

[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	**291 458**	**100.0**	**397 829**	**100.0**	**82 601**	**100.0**
NEW ENGLAND STATES						
Connecticut	1 329	.5	270	–	215	.3
Maine	562	.2	125	–	133	.2
Massachusetts	2 583	.9	618	.2	562	.7
New Hampshire	271	–	39	–	37	–
Rhode Island	370	.1	S	S	S	S
Vermont	58	–	S	S	S	S
MIDDLE ATLANTIC STATES						
New Jersey	4 501	1.5	1 487	.4	1 074	1.3
New York	5 989	2.1	3 460	.9	2 104	2.5
Pennsylvania	6 498	2.2	3 842	1.0	2 324	2.8
EAST NORTH CENTRAL STATES						
Illinois	21 980	7.5	24 373	6.1	3 006	3.6
Indiana	82 868	28.4	252 112	63.4	8 884	10.8
Michigan	24 532	8.4	14 201	3.6	3 537	4.3
Ohio	22 343	7.7	15 823	4.0	3 586	4.3
Wisconsin	4 387	1.5	4 472	1.1	1 033	1.3
WEST NORTH CENTRAL STATES						
Iowa	3 382	1.2	2 865	.7	1 036	1.3
Kansas	2 378	.8	1 172	.3	777	.9
Minnesota	3 602	1.2	1 899	.5	1 017	1.2
Missouri	7 005	2.4	2 933	.7	1 139	1.4
Nebraska	2 147	.7	1 165	.3	888	1.1
North Dakota	731	.3	S	S	S	S
South Dakota	S	S	64	–	50	–
SOUTH ATLANTIC STATES						
Delaware	S	S	190	–	140	.2
District of Columbia	86	–	S	S	S	S
Florida	7 408	2.5	3 545	.9	4 216	5.1
Georgia	6 002	2.1	S	S	S	S
Maryland	2 706	.9	1 550	.4	1 100	1.3
North Carolina	3 769	1.3	2 447	.6	1 803	2.2
South Carolina	2 476	.8	S	S	S	S
Virginia	4 079	1.4	1 195	.3	761	.9
West Virginia	1 173	.4	1 493	.4	649	.8
EAST SOUTH CENTRAL STATES						
Alabama	2 094	.7	3 989	1.0	2 799	3.4
Kentucky	16 924	5.8	12 461	3.1	1 856	2.2
Mississippi	S	S	S	S	S	S
Tennessee	6 296	2.2	7 187	1.8	3 133	3.8
WEST SOUTH CENTRAL STATES						
Arkansas	1 679	.6	1 746	.4	1 018	1.2
Louisiana	1 396	.5	3 922	1.0	3 846	4.7
Oklahoma	2 145	.7	S	S	S	S
Texas	13 831	4.7	4 575	1.1	5 095	6.2
MOUNTAIN STATES						
Arizona	1 186	.4	342	–	631	.8
Colorado	1 643	.6	401	.1	445	.5
Idaho	S	S	S	S	S	S
Montana	S	S	87	–	133	.2
Nevada	358	.1	52	–	102	.1
New Mexico	391	.1	S	S	S	S
Utah	755	.3	138	–	216	.3
Wyoming	S	S	4	–	5	–
PACIFIC STATES						
Alaska	30	–	1	–	1	–
California	10 122	3.5	3 793	1.0	8 462	10.2
Hawaii	27	–	2	–	9	–
Oregon	1 606	.6	421	.1	978	1.2
Washington	1 597	.5	527	.1	1 204	1.5

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

[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	**244 031**	**100.0**	**428 530**	**100.0**	**93 351**	**100.0**
NEW ENGLAND STATES						
Connecticut	851	.3	162	–	131	.1
Maine	322	.1	196	–	208	.2
Massachusetts	1 726	.7	S	S	S	S
New Hampshire	316	.1	S	S	S	S
Rhode Island	218	–	24	–	22	–
Vermont	195	–	65	–	57	–
MIDDLE ATLANTIC STATES						
New Jersey	2 774	1.1	426	.1	313	.3
New York	2 943	1.2	1 312	.3	838	.9
Pennsylvania	5 653	2.3	2 550	.6	1 354	1.5
EAST NORTH CENTRAL STATES						
Illinois	25 974	10.6	52 005	12.1	6 246	6.7
Indiana	82 868	34.0	252 112	58.8	8 884	9.5
Michigan	16 496	6.8	10 902	2.5	2 136	2.3
Ohio	27 270	11.2	22 200	5.2	4 033	4.3
Wisconsin	5 019	2.1	3 611	.8	1 463	1.6
WEST NORTH CENTRAL STATES						
Iowa	2 252	.9	1 249	.3	481	.5
Kansas	953	.4	380	–	251	.3
Minnesota	2 705	1.1	18 562	4.3	16 489	17.7
Missouri	4 988	2.0	5 148	1.2	1 759	1.9
Nebraska	1 058	.4	437	.1	313	.3
North Dakota	90	–	60	–	53	–
South Dakota	S	S	59	–	47	–
SOUTH ATLANTIC STATES						
Delaware	190	–	47	–	34	–
District of Columbia	S	S	S	S	S	S
Florida	2 161	.9	1 026	.2	1 132	1.2
Georgia	2 746	1.1	1 216	.3	802	.9
Maryland	671	.3	760	.2	534	.6
North Carolina	4 644	1.9	1 533	.4	949	1.0
South Carolina	2 218	.9	869	.2	574	.6
Virginia	1 956	.8	3 047	.7	1 787	1.9
West Virginia	877	.4	11 764	2.7	6 177	6.6
EAST SOUTH CENTRAL STATES						
Alabama	2 463	1.0	1 689	.4	1 035	1.1
Kentucky	9 807	4.0	7 840	1.8	1 449	1.6
Mississippi	993	.4	686	.2	463	.5
Tennessee	6 567	2.7	2 032	.5	743	.8
WEST SOUTH CENTRAL STATES						
Arkansas	1 673	.7	886	.2	548	.6
Louisiana	871	.4	690	.2	606	.6
Oklahoma	838	.3	499	.1	391	.4
Texas	4 486	1.8	2 655	.6	3 046	3.3
MOUNTAIN STATES						
Arizona	2 031	.8	37	–	66	–
Colorado	556	.2	192	–	223	.2
Idaho	156	–	196	–	340	.4
Montana	77	–	1 309	.3	1 718	1.8
Nevada	670	.3	39	–	73	–
New Mexico	153	–	121	–	169	.2
Utah	1 058	.4	S	S	S	S
Wyoming	148	–	14 668	3.4	19 205	20.6
PACIFIC STATES						
Alaska	S	S	S	S	S	S
California	9 979	4.1	1 055	.2	2 293	2.5
Hawaii	S	S	S	S	S	S
Oregon	487	.2	S	S	S	S
Washington	520	.2	74	–	166	.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.

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	**291 458**	**213 083**	**36.8**	**397 829**	**337 584**	**17.8**	**82 601**	**57 470**	**43.7**	**682**	**421**	**62.1**
Single modes	**244 448**	**180 752**	**35.2**	**382 357**	**323 469**	**18.2**	**74 388**	**52 067**	**42.9**	**150**	**254**	**–40.9**
Truck[2]	225 612	163 457	38.0	291 532	251 190	16.1	41 147	29 584	39.1	136	179	–24.2
Rail	11 600	12 027	–3.6	57 902	59 525	–2.7	28 614	18 925	51.2	667	522	27.7
Water	1 153	1 183	–2.5	14 935	8 008	86.5	4 294	3 267	31.5	S	S	S
Air (includes truck and air)	S	3 058	S	S	98	S	S	125	S	1 465	1 266	15.7
Pipeline[3]	S	1 027	S	S	4 648	S	S	S	S	S	S	S
Multiple modes	**32 216**	**22 466**	**43.4**	**6 260**	**S**	**S**	**6 338**	**3 966**	**59.8**	**897**	**640**	**40.1**
Parcel, U.S. Postal Service or courier	24 999	16 441	52.1	682	565	20.7	461	321	43.5	896	639	40.3
Truck and rail	6 343	5 267	20.4	1 938	S	S	2 105	2 127	–1.1	1 340	1 285	4.3
All other multiple modes	S	S	S	S	S	S	S	S	S	2 969	S	S
Other and unknown modes	**14 794**	**9 865**	**50.0**	**9 212**	**6 610**	**39.4**	**1 875**	**1 437**	**30.5**	**116**	**147**	**–21.1**

– 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.
[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]	**291 458**	**213 083**	**36.8**	**397 829**	**337 584**	**17.8**	**82 601**	**57 470**	**43.7**	**682**	**421**	**62.1**
01-05	Agricultural products and fish	6 444	9 274	–30.5	35 807	28 338	26.4	18 988	9 960	90.6	S	151	S
06-09	Grains, alcohol, and tobacco products	18 152	14 380	26.2	23 131	17 867	29.5	6 347	6 329	.3	S	82	S
10-14	Stones, nonmetallic minerals, and metallic ores	952	802	18.7	95 400	95 822	–.4	3 784	3 970	–4.7	23	32	–26.9
15-19	Coal and petroleum products	14 118	11 152	26.6	93 596	84 890	10.3	6 555	5 538	18.4	60	38	55.1
20-24	Basic chemicals, chemical, and pharmaceutical products	28 668	23 753	20.7	16 383	14 150	15.8	4 974	2 581	92.7	231	312	–25.9
25-30	Logs, wood products, and textile and leather	22 882	23 353	–2.0	13 263	8 684	52.7	4 822	2 817	71.2	816	672	21.4
31-34	Base metal and machinery	65 047	51 556	26.2	81 068	63 543	27.6	24 643	19 016	29.6	370	387	–4.4
35-38	Electronic, motorized vehicles, and precision instruments	86 745	58 405	48.5	16 881	10 804	56.3	6 995	4 397	59.1	828	321	158.3
39-43	Furniture, mixed freight and misc. manufactured prod.	48 080	19 329	148.7	22 169	12 761	73.7	5 468	2 733	100.1	308	434	–29.0
--	Commodity unknown	371	S	S	S	724	S	27	128	–79.2	S	495	S

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

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

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

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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	**4.9**	**–**	**11.9**	**–**	**8.6**	**–**	**15.3**
Single modes	**5.6**	**1.9**	**12.1**	**.6**	**8.8**	**2.3**	**18.6**
Truck	5.8	2.0	14.3	3.2	7.7	3.9	19.0
For-hire truck	7.8	2.3	15.2	2.7	7.7	2.1	6.9
Private truck	10.1	3.1	16.8	3.9	16.6	2.4	19.7
Rail	10.6	.5	17.0	3.1	17.8	3.3	6.9
Water	49.5	.2	38.7	1.4	17.0	1.0	S
Shallow draft	S	S	42.7	1.4	17.0	1.0	S
Great Lakes	S	S	S	S	S	S	31.6
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	8.6
Pipeline	S	S	S	S	S	S	S
Multiple modes	**13.2**	**1.4**	**37.7**	**.6**	**38.4**	**2.4**	**9.3**
Parcel, U.S. Postal Service or courier	10.3	.9	13.1	–	16.9	.1	9.4
Truck and rail	34.6	.7	39.9	.2	26.6	.6	11.6
Truck and water	40.6	–	S	S	S	S	22.7
Rail and water	44.3	–	43.2	–	45.2	–	23.7
Other multiple modes	S	S	S	S	S	S	28.4
Other and unknown modes	**31.3**	**1.6**	**21.5**	**.6**	**25.2**	**.8**	**24.9**

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

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

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

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

Mode of transportation	Value (percent)		Tons (percent)		Ton-miles (percent)	
	2002	1997	2002	1997	2002	1997
Total	**–**	**–**	**–**	**–**	**–**	**–**
Single modes	**1.9**	**1.2**	**.6**	**1.1**	**2.3**	**2.1**
Truck	2.0	1.5	3.2	3.4	3.9	2.8
For-hire truck	2.3	1.6	2.7	2.0	2.1	2.2
Private truck	3.1	1.0	3.9	2.8	2.4	.9
Rail	.5	.6	3.1	1.7	3.3	2.2
Water	.2	.3	1.4	.7	1.0	1.6
Shallow draft	S	.3	1.4	.7	1.0	1.6
Great Lakes	S	–	S	–	S	–
Deep draft	–	–	–	–	–	–
Air (includes truck and air)	S	.3	S	–	S	–
Pipeline	S	.1	S	.3	S	S
Multiple modes	**1.4**	**1.0**	**.6**	**S**	**2.4**	**1.9**
Parcel, U.S. Postal Service or courier	.9	.7	–	–	.1	–
Truck and rail	.7	.7	.2	S	.6	.9
Truck and water	–	–	S	S	S	S
Rail and water	–	–	–	–	–	–
Other multiple modes	S	S	S	S	S	S
Other and unknown modes	**1.6**	**.9**	**.6**	**.4**	**.8**	**.6**

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

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

Table B–2. **Estimated Measures of Reliability for Shipment Characteristics by Total Modal Activity for State of Origin: 2002**

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

Mode of transportation	Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	
Total	**8.6**	**–**	**15.3**
Truck	7.7	3.9	19.0
Rail	17.8	3.3	6.9
Shallow draft	17.0	1.0	S
Great Lakes	S	S	31.6
Deep draft	–	–	–
Air	S	S	8.6
Parcel, U.S. Postal Service or courier	35.9	–	S
Pipeline	S	S	S
Other and unknown modes	25.2	.8	24.9

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

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

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

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

Mode of transportation and distance shipped (based on Great Circle Distance)	Value		Tons		Ton-miles	
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage
Total	**4.9**	**–**	**11.9**	**–**	**8.6**	**–**
Less than 50 miles	8.5	2.5	21.7	4.9	16.1	1.1
50 to 99 miles	10.6	.8	10.2	.9	10.0	.4
100 to 249 miles	7.0	1.4	8.1	2.0	7.9	1.3
250 to 499 miles	11.6	1.3	18.4	2.4	22.6	3.6
500 to 749 miles	11.3	.9	9.8	.9	9.7	1.9
750 to 999 miles	15.1	.8	20.5	.4	23.1	2.2
1,000 to 1,499 miles	20.1	.7	7.3	–	8.1	.3
1,500 to 1,999 miles	17.8	.7	21.4	.3	20.7	2.5
2,000 miles or more	47.7	–	S	S	S	S
Single modes	**5.6**	**–**	**12.1**	**–**	**8.8**	**–**
Less than 50 miles	9.5	2.6	21.9	5.0	16.1	1.2
50 to 99 miles	12.7	1.0	10.7	.9	10.2	.4
100 to 249 miles	6.8	1.7	7.9	2.0	7.7	1.3
250 to 499 miles	14.0	1.6	20.3	2.5	25.7	4.3
500 to 749 miles	12.6	.9	11.5	1.0	11.2	2.2
750 to 999 miles	13.8	.6	24.7	.4	24.4	2.3
1,000 to 1,499 miles	22.8	.7	8.1	–	8.9	.3
1,500 to 1,999 miles	22.0	.7	23.2	.3	22.6	2.6
2,000 miles or more	S	S	S	S	S	S
Truck	**5.8**	**–**	**14.3**	**–**	**7.7**	**–**
Less than 50 miles	9.5	2.8	22.6	4.2	17.7	1.9
50 to 99 miles	12.3	.9	11.0	.8	9.9	.6
100 to 249 miles	8.2	2.0	9.9	2.1	9.3	2.1
250 to 499 miles	13.3	1.4	10.9	1.2	11.4	1.8
500 to 749 miles	13.4	.9	15.1	.8	14.9	2.0
750 to 999 miles	14.2	.6	20.6	.3	20.3	2.1
1,000 to 1,499 miles	25.0	.7	14.9	.1	15.0	.6
1,500 to 1,999 miles	22.3	.7	30.8	.4	30.3	3.1
2,000 miles or more	S	S	S	S	S	S
For-hire truck	**7.8**	**–**	**15.2**	**–**	**7.7**	**–**
Less than 50 miles	18.7	2.4	31.0	5.9	26.3	1.4
50 to 99 miles	12.1	.7	21.8	1.1	18.5	.7
100 to 249 miles	11.6	2.4	10.9	3.7	10.4	2.8
250 to 499 miles	17.9	2.1	14.1	2.4	15.1	2.4
500 to 749 miles	14.1	1.5	15.7	1.2	15.4	2.1
750 to 999 miles	14.8	1.0	23.1	.8	22.9	2.8
1,000 to 1,499 miles	26.5	1.5	15.6	.2	16.4	.6
1,500 to 1,999 miles	23.4	1.1	32.3	.7	31.8	4.1
2,000 miles or more	S	S	S	S	S	S
Private truck	**10.1**	**–**	**16.8**	**–**	**16.6**	**–**
Less than 50 miles	12.1	3.8	19.7	3.9	17.7	5.2
50 to 99 miles	20.8	1.9	18.5	1.4	18.3	1.1
100 to 249 miles	12.9	2.5	23.9	2.1	23.3	2.2
250 to 499 miles	17.3	1.0	26.0	.8	25.4	2.9
500 to 749 miles	21.5	.5	23.7	.2	23.1	1.8
750 to 999 miles	42.5	.5	23.8	–	23.7	.6
1,000 to 1,499 miles	29.8	.1	38.9	–	39.3	.7
1,500 to 1,999 miles	44.8	.4	30.2	–	30.2	.9
2,000 miles or more	S	S	S	S	S	S
Rail	**10.6**	**–**	**17.0**	**–**	**17.8**	**–**
Less than 50 miles	26.0	2.6	23.6	5.2	26.9	.9
50 to 99 miles	25.4	1.0	44.1	1.1	38.1	.3
100 to 249 miles	45.2	6.8	30.9	2.6	28.2	2.0
250 to 499 miles	27.2	6.2	35.1	5.0	39.3	7.7
500 to 749 miles	19.9	4.0	19.0	4.3	18.1	5.1
750 to 999 miles	23.1	1.5	38.7	2.3	38.3	3.7
1,000 to 1,499 miles	44.1	2.1	26.0	.2	26.2	1.0
1,500 to 1,999 miles	S	S	29.7	1.2	30.1	4.4
2,000 miles or more	–	–	–	–	–	–
Water	**49.5**	**–**	**38.7**	**–**	**17.0**	**–**
Less than 50 miles	S	S	S	S	36.9	.8
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	22.7	15.3	23.1	15.3	23.6	12.7
750 to 999 miles	–	–	–	–	–	–
1,000 to 1,499 miles	–	–	–	–	–	–
1,500 to 1,999 miles	–	–	–	–	–	–
2,000 miles or more	–	–	–	–	–	–
Shallow draft	**S**	**S**	**42.7**	**–**	**17.0**	**–**
Less than 50 miles	S	S	S	S	37.9	.8
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	22.7	16.3	23.1	17.0	23.6	12.7
750 to 999 miles	–	–	–	–	–	–
1,000 to 1,499 miles	–	–	–	–	–	–
1,500 to 1,999 miles	–	–	–	–	–	–
2,000 miles or more	–	–	–	–	–	–

See footnotes at end of table.

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

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

Mode of transportation and distance shipped (based on Great Circle Distance)	Value		Tons		Ton-miles	
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage
Single modes—Con.						
Great Lakes	**S**	**S**	**S**	**S**	**S**	**S**
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	–	–	–	–	–	–
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)	**S**	**S**	**S**	**S**	**S**	**S**
Less than 50 miles	–	–	–	–	–	–
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	23.0	6.7	42.8	8.5	30.6	6.0
500 to 749 miles	43.5	8.8	23.9	10.2	43.9	10.9
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	S	S	S	S	S	S
1,500 to 1,999 miles	S	S	21.9	5.1	22.5	7.8
2,000 miles or more	38.9	.3	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	S	S	S	S
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	–	–	–	–	S	S
500 to 749 miles	S	S	S	S	S	S
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	–	–	–	–	S	S
1,500 to 1,999 miles	–	–	–	–	S	S
2,000 miles or more	–	–	–	–	S	S
Multiple modes	**13.2**	**–**	**37.7**	**–**	**38.4**	**–**
Less than 50 miles	41.1	1.5	25.7	.6	29.3	–
50 to 99 miles	30.1	2.6	40.0	3.6	39.2	.3
100 to 249 miles	12.8	2.6	S	S	S	S
250 to 499 miles	18.1	1.2	S	S	S	S
500 to 749 miles	23.0	2.3	47.2	3.9	S	S
750 to 999 miles	23.7	4.8	S	S	S	S
1,000 to 1,499 miles	22.0	2.1	21.3	4.6	20.1	6.7
1,500 to 1,999 miles	21.6	1.3	25.5	3.9	25.7	8.3
2,000 miles or more	34.8	–	37.2	–	41.0	.2
Parcel, U.S. Postal Service or courier	**10.3**	**–**	**13.1**	**–**	**16.9**	**–**
Less than 50 miles	41.1	1.7	25.7	1.4	29.3	.1
50 to 99 miles	31.1	2.6	24.6	1.7	21.5	.3
100 to 249 miles	12.8	2.8	18.4	2.7	17.5	1.2
250 to 499 miles	13.5	1.5	21.9	2.1	21.5	2.1
500 to 749 miles	18.9	2.4	17.6	2.6	18.0	2.2
750 to 999 miles	32.2	5.5	12.9	.7	12.6	1.6
1,000 to 1,499 miles	20.6	.6	42.0	1.6	39.8	2.0
1,500 to 1,999 miles	20.5	1.4	24.6	1.7	25.0	3.3
2,000 miles or more	45.9	–	34.3	–	34.8	.3
Truck and rail	**34.6**	**–**	**39.9**	**–**	**26.6**	**–**
Less than 50 miles	–	–	–	–	–	–
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	41.6	2.7	S	S	S	S
250 to 499 miles	S	S	43.9	2.2	44.4	1.2
500 to 749 miles	46.3	4.2	S	S	S	S
750 to 999 miles	S	S	47.5	3.4	47.1	3.0
1,000 to 1,499 miles	37.4	9.4	25.6	8.7	24.3	8.6
1,500 to 1,999 miles	27.4	9.4	27.2	8.7	27.3	7.6
2,000 miles or more	–	–	–	–	–	–
Truck and water	**40.6**	**–**	**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	S	S	S	S	S	S
500 to 749 miles	–	–	–	–	–	–
750 to 999 miles	–	–	–	–	–	–
1,000 to 1,499 miles	–	–	–	–	–	–
1,500 to 1,999 miles	–	–	–	–	–	–
2,000 miles or more	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	**44.3**	**–**	**43.2**	**–**	**45.2**	**–**
Less than 50 miles	–	–	–	–	–	–
50 to 99 miles	–	–	–	–	–	–
100 to 249 miles	48.5	10.0	S	S	S	S
250 to 499 miles	S	S	S	S	S	S
500 to 749 miles	–	–	–	–	–	–
750 to 999 miles	–	–	–	–	–	–
1,000 to 1,499 miles	–	–	–	–	–	–
1,500 to 1,999 miles	–	–	–	–	–	–
2,000 miles or more	–	–	–	–	–	–
Other multiple modes	**S**	**S**	**S**	**S**	**S**	**S**
Less than 50 miles	–	–	–	–	–	–
50 to 99 miles	–	–	–	–	–	–
100 to 249 miles	–	–	–	–	–	–
250 to 499 miles	S	S	S	S	S	S
500 to 749 miles	–	–	–	–	–	–
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	**31.3**	**–**	**21.5**	**–**	**25.2**	**–**
Less than 50 miles	40.3	8.1	22.6	10.2	32.7	4.0
50 to 99 miles	48.2	3.6	S	S	S	S
100 to 249 miles	45.4	5.6	32.1	8.9	31.2	7.6
250 to 499 miles	32.5	3.0	43.6	3.4	44.4	5.8
500 to 749 miles	47.1	1.3	S	S	S	S
750 to 999 miles	46.4	1.1	S	S	S	S
1,000 to 1,499 miles	48.5	.4	46.0	.2	44.6	1.1
1,500 to 1,999 miles	S	S	48.5	.9	49.5	7.5
2,000 miles or more	–	–	–	–	–	–

– 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	**4.9**	**–**	**11.9**	**–**	**8.6**	**–**	**15.3**
Less than 50 lb	13.8	1.4	10.4	–	21.4	.1	14.8
50 to 99 lb	13.0	.4	14.9	–	20.3	–	28.1
100 to 499 lb	8.2	.6	8.0	–	8.1	–	13.5
500 to 749 lb	9.6	.1	8.2	–	10.7	–	13.6
750 to 999 lb	20.6	.4	16.2	–	12.8	–	15.0
1,000 to 9,999 lb	6.3	1.0	13.2	.6	19.7	1.6	9.6
10,000 to 49,999 lb	8.6	1.9	18.2	3.3	8.3	2.4	16.3
50,000 to 99,999 lb	9.4	.5	10.0	1.8	9.9	1.0	19.7
100,000 lb or more	18.9	.9	13.6	3.6	15.4	4.0	8.1
Single modes	**5.6**	**–**	**12.1**	**–**	**8.8**	**–**	**18.6**
Less than 50 lb	39.7	1.4	18.1	–	13.2	–	33.3
50 to 99 lb	9.5	.1	23.0	–	21.3	–	31.7
100 to 499 lb	8.4	.5	9.7	–	8.9	–	17.2
500 to 749 lb	10.7	.2	8.3	–	11.5	–	15.0
750 to 999 lb	20.3	.3	17.0	–	12.5	–	15.3
1,000 to 9,999 lb	7.7	1.3	13.5	.6	22.1	1.7	10.0
10,000 to 49,999 lb	8.8	2.4	18.5	3.7	8.5	2.9	16.8
50,000 to 99,999 lb	9.6	.7	10.0	1.9	10.6	1.0	20.7
100,000 lb or more	21.2	1.1	15.5	3.9	16.1	3.9	8.5
Truck[2]	**5.8**	**–**	**14.3**	**–**	**7.7**	**–**	**19.0**
Less than 50 lb	44.7	1.4	18.3	–	12.3	–	29.6
50 to 99 lb	7.8	.1	23.2	–	22.9	–	29.6
100 to 499 lb	9.2	.6	9.7	–	9.5	–	18.2
500 to 749 lb	10.7	.2	8.3	–	11.7	–	15.3
750 to 999 lb	20.5	.4	17.0	–	12.7	–	15.5
1,000 to 9,999 lb	7.9	1.6	13.6	1.0	22.4	2.6	10.2
10,000 to 49,999 lb	9.0	2.4	18.5	2.7	8.8	3.3	17.0
50,000 to 99,999 lb	12.5	.7	10.0	2.2	12.1	1.5	22.2
100,000 lb or more	23.7	.2	24.6	1.7	30.7	2.3	48.6
For-hire truck	**7.8**	**–**	**15.2**	**–**	**7.7**	**–**	**6.9**
Less than 50 lb	24.7	.2	21.4	–	21.2	–	8.8
50 to 99 lb	19.9	–	21.5	–	31.2	–	12.2
100 to 499 lb	16.8	.8	12.4	–	12.9	.1	4.2
500 to 749 lb	18.1	.3	12.8	–	15.7	–	9.6
750 to 999 lb	29.6	.5	16.9	–	16.7	–	10.9
1,000 to 9,999 lb	10.5	2.3	13.8	1.0	26.1	3.4	8.8
10,000 to 49,999 lb	8.8	2.3	18.9	3.2	9.1	4.4	15.4
50,000 to 99,999 lb	19.7	1.0	17.3	3.0	20.9	2.0	16.1
100,000 lb or more	30.5	.3	22.0	1.3	35.7	3.1	27.9
Private truck	**10.1**	**–**	**16.8**	**–**	**16.6**	**–**	**19.7**
Less than 50 lb	S	S	20.8	–	16.8	–	25.8
50 to 99 lb	9.2	.3	25.8	–	23.1	–	43.8
100 to 499 lb	12.5	1.0	15.2	.2	14.0	.4	29.3
500 to 749 lb	19.1	.4	14.0	–	16.8	.1	12.0
750 to 999 lb	26.0	.4	19.6	.1	15.3	.1	22.9
1,000 to 9,999 lb	6.6	3.3	17.2	1.9	11.7	2.1	22.1
10,000 to 49,999 lb	18.1	4.9	20.6	3.5	18.6	3.1	17.2
50,000 to 99,999 lb	23.2	1.3	21.6	3.2	23.7	2.3	26.6
100,000 lb or more	47.4	.3	31.6	2.7	35.2	1.6	19.9
Rail	**10.6**	**–**	**17.0**	**–**	**17.8**	**–**	**6.9**
Less than 50 lb	S	S	S	S	S	S	31.6
50 to 99 lb	–	–	–	–	–	–	–
100 to 499 lb	S	S	S	S	S	S	30.4
500 to 749 lb	S	S	S	S	S	S	29.9
750 to 999 lb	S	S	S	S	S	S	30.3
1,000 to 9,999 lb	S	S	43.7	–	45.6	.2	19.2
10,000 to 49,999 lb	26.5	2.5	27.0	.5	28.4	.7	18.7
50,000 to 99,999 lb	S	S	42.2	1.2	35.2	1.6	S
100,000 lb or more	13.1	8.5	18.2	1.6	19.3	2.1	8.3
Water	**49.5**	**–**	**38.7**	**–**	**17.0**	**–**	**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	S	S	S	S	S	S	S
50,000 to 99,999 lb	–	–	–	–	–	–	–
100,000 lb or more	49.8	.5	39.4	1.6	16.7	.3	39.1
Shallow draft	**S**	**S**	**42.7**	**–**	**17.0**	**–**	**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	S	S	S	S	S	S	S
50,000 to 99,999 lb	–	–	–	–	–	–	–
100,000 lb or more	S	S	43.5	1.6	16.7	.3	40.5

See footnote at end of table.

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

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

Mode of transportation and shipment weight	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
Single modes—Con.							
Great Lakes	**S**	**S**	**S**	**S**	**S**	**S**	**31.6**
Less than 50 lb	–	–	–	–	–	–	–
50 to 99 lb	–	–	–	–	–	–	–
100 to 499 lb	–	–	–	–	–	–	–
500 to 749 lb	–	–	–	–	–	–	–
750 to 999 lb	–	–	–	–	–	–	–
1,000 to 9,999 lb	–	–	–	–	–	–	–
10,000 to 49,999 lb	–	–	–	–	–	–	–
50,000 to 99,999 lb	–	–	–	–	–	–	–
100,000 lb or more	S	S	S	S	S	S	31.6
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)	**S**	**S**	**S**	**S**	**S**	**S**	**8.6**
Less than 50 lb	S	S	28.6	9.2	27.2	9.8	6.3
50 to 99 lb	S	S	35.9	2.5	30.5	3.4	12.7
100 to 499 lb	S	S	23.5	12.8	34.4	14.1	22.6
500 to 749 lb	S	S	S	S	S	S	29.9
750 to 999 lb	S	S	S	S	S	S	31.2
1,000 to 9,999 lb	41.2	6.3	49.6	5.9	45.9	3.5	S
10,000 to 49,999 lb	S	S	S	S	S	S	29.9
50,000 to 99,999 lb	–	–	–	–	–	–	–
100,000 lb or more	S	S	S	S	S	S	31.6
Pipeline[3]	**S**	**S**	**S**	**S**	**S**	**S**	**S**
Less than 50 lb	S	S	S	S	S	S	S
50 to 99 lb	–	–	–	–	S	S	S
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	S	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	**13.2**	**–**	**37.7**	**–**	**38.4**	**–**	**9.3**
Less than 50 lb	17.9	4.7	18.3	3.5	23.9	2.8	9.3
50 to 99 lb	22.6	2.9	21.6	2.1	28.9	1.0	12.5
100 to 499 lb	25.2	3.4	23.4	3.5	20.0	2.8	10.1
500 to 749 lb	45.1	.3	29.8	.5	S	S	19.2
750 to 999 lb	S	S	32.6	.5	S	S	21.5
1,000 to 9,999 lb	S	S	S	S	S	S	31.8
10,000 to 49,999 lb	23.4	2.1	24.6	7.5	28.0	9.4	7.0
50,000 to 99,999 lb	S	S	S	S	S	S	28.0
100,000 lb or more	S	S	S	S	S	S	20.3
Parcel, U.S. Postal Service or courier	**10.3**	**–**	**13.1**	**–**	**16.9**	**–**	**9.4**
Less than 50 lb	17.9	7.2	18.3	5.7	23.9	6.4	9.3
50 to 99 lb	22.6	3.1	21.7	2.9	28.9	2.5	12.5
100 to 499 lb	25.3	3.6	23.6	3.9	20.8	5.3	10.2
500 to 749 lb	45.6	.4	30.5	1.0	S	S	19.5
750 to 999 lb	S	S	34.1	.8	S	S	22.5
1,000 to 9,999 lb	–	–	–	–	–	–	–
10,000 to 49,999 lb	–	–	–	–	–	–	–
50,000 to 99,999 lb	–	–	–	–	–	–	–
100,000 lb or more	–	–	–	–	–	–	–
Truck and rail	**34.6**	**–**	**39.9**	**–**	**26.6**	**–**	**11.6**
Less than 50 lb	–	–	–	–	–	–	–
50 to 99 lb	S	S	S	S	S	S	31.6
100 to 499 lb	S	S	S	S	S	S	31.6
500 to 749 lb	S	S	S	S	S	S	31.6
750 to 999 lb	S	S	S	S	S	S	31.6
1,000 to 9,999 lb	S	S	S	S	S	S	25.1
10,000 to 49,999 lb	23.6	16.6	24.9	15.7	28.0	12.1	7.2
50,000 to 99,999 lb	S	S	S	S	S	S	28.0
100,000 lb or more	S	S	S	S	S	S	27.9
Truck and water	**40.6**	**–**	**S**	**S**	**S**	**S**	**22.7**
Less than 50 lb	–	–	–	–	–	–	–
50 to 99 lb	–	–	–	–	–	–	–
100 to 499 lb	S	S	S	S	S	S	27.9
500 to 749 lb	S	S	S	S	S	S	31.6
750 to 999 lb	S	S	S	S	S	S	31.6
1,000 to 9,999 lb	S	S	S	S	S	S	31.2
10,000 to 49,999 lb	S	S	S	S	S	S	29.8
50,000 to 99,999 lb	–	–	–	–	–	–	–
100,000 lb or more	S	S	S	S	S	S	31.6

See footnote at end of table.

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

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

Mode of transportation and shipment weight	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
Multiple modes—Con.							
Rail and water	**44.3**	**–**	**43.2**	**–**	**45.2**	**–**	**23.7**
Less than 50 lb	–	–	–	–	–	–	–
50 to 99 lb	–	–	–	–	–	–	–
100 to 499 lb	–	–	–	–	–	–	–
500 to 749 lb	–	–	–	–	–	–	–
750 to 999 lb	–	–	–	–	–	–	–
1,000 to 9,999 lb	–	–	–	–	–	–	–
10,000 to 49,999 lb	S	S	S	S	S	S	31.6
50,000 to 99,999 lb	–	–	–	–	–	–	–
100,000 lb or more	47.6	4.8	43.5	.9	45.5	.9	23.7
Other multiple modes	**S**	**S**	**S**	**S**	**S**	**S**	**28.4**
Less than 50 lb	–	–	–	–	–	–	–
50 to 99 lb	–	–	–	–	–	–	–
100 to 499 lb	–	–	–	–	–	–	–
500 to 749 lb	–	–	–	–	–	–	–
750 to 999 lb	–	–	–	–	–	–	–
1,000 to 9,999 lb	–	–	–	–	–	–	–
10,000 to 49,999 lb	–	–	–	–	–	–	–
50,000 to 99,999 lb	–	–	–	–	–	–	–
100,000 lb or more	S	S	S	S	S	S	28.4
Other and unknown modes	**31.3**	**–**	**21.5**	**–**	**25.2**	**–**	**24.9**
Less than 50 lb	49.6	6.4	35.5	–	36.4	–	25.1
50 to 99 lb	45.1	.6	26.6	–	41.5	–	49.4
100 to 499 lb	27.2	1.6	20.4	.1	20.9	.3	34.7
500 to 749 lb	S	S	39.9	–	S	S	41.9
750 to 999 lb	48.3	–	S	S	S	S	26.4
1,000 to 9,999 lb	44.1	10.7	45.4	5.3	33.1	3.4	29.3
10,000 to 49,999 lb	34.4	7.8	36.0	8.8	32.4	10.4	32.5
50,000 to 99,999 lb	S	S	44.0	1.6	S	S	26.7
100,000 lb or more	24.0	4.5	23.9	9.8	44.5	12.9	36.9

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

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

Table B–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	**4.9**	**–**	**11.9**	**–**	**8.6**	**–**	**15.3**
01	Live animals and live fish	–	–	–	–	–	–	–
02	Cereal grains	36.4	.2	36.5	2.4	35.5	3.9	22.6
03	Other agricultural products	26.1	.2	31.5	.5	21.0	.9	36.0
04	Animal feed and products of animal origin, n.e.c.	18.8	–	28.4	.2	22.6	.5	S
05	Meat, fish, seafood, and their preparations	44.0	.3	45.1	.1	34.8	.1	33.6
06	Milled grain products and preparations, and bakery products	S	S	S	S	S	S	S
07	Other prepared foodstuffs and fats and oils	25.2	1.0	13.4	.8	21.0	1.1	S
08	Alcoholic beverages	25.1	–	40.6	–	40.2	–	18.7
09	Tobacco products	34.3	.2	47.7	–	26.8	–	36.7
10	Monumental or building stone	S	S	S	S	S	S	31.6
11	Natural sands	35.8	–	42.2	1.6	41.5	.2	18.4
12	Gravel and crushed stone	35.9	–	39.6	3.6	21.2	.7	19.0
13	Nonmetallic minerals n.e.c.	49.5	–	S	S	S	S	S
14	Metallic ores and concentrates	41.5	–	41.7	–	41.5	–	22.8
15	Coal	11.9	–	17.0	1.6	35.6	1.3	15.8
17	Gasoline and aviation turbine fuel	36.7	.9	39.6	2.0	27.2	.3	28.1
18	Fuel oils	43.4	.3	45.6	.5	38.1	.2	32.6
19	Coal and petroleum products, n.e.c.	22.3	.3	33.2	2.6	31.0	1.5	30.2
20	Basic chemicals	33.3	.2	40.9	.4	43.3	1.2	30.2
21	Pharmaceutical products	30.7	.7	46.1	–	46.1	–	S
22	Fertilizers	40.3	.1	40.1	.6	31.7	.1	S
23	Chemical products and preparations, n.e.c.	41.0	1.0	48.6	.3	45.7	.5	49.0
24	Plastics and rubber	19.8	.7	20.4	.2	23.6	.3	19.7
25	Logs and other wood in the rough	S	S	S	S	S	S	36.0
26	Wood products	15.4	.2	19.8	.3	33.8	.6	44.4
27	Pulp, newsprint, paper, and paperboard	S	S	S	S	S	S	30.2
28	Paper or paperboard articles	40.8	.4	S	S	35.7	.2	47.0
29	Printed products	21.7	.3	29.7	.1	27.9	.2	10.8
30	Textiles, leather, and articles of textiles or leather	17.0	.6	14.9	–	19.0	–	10.0
31	Nonmetallic mineral products	15.9	.2	41.3	3.1	29.7	1.4	S
32	Base metal in primary or semifinished forms and in finished basic shapes	12.2	.8	7.6	1.7	13.9	2.3	18.2
33	Articles of base metal	40.7	1.1	41.8	.3	S	S	14.2
34	Machinery	20.7	1.9	19.2	.2	25.4	.7	14.1
35	Electronic and other electrical equipment and components and office equipment	20.2	2.1	17.6	.1	15.9	.3	13.2
36	Motorized and other vehicles (including parts)	14.6	2.6	17.8	.6	23.1	1.3	27.6
37	Transportation equipment, n.e.c.	S	S	S	S	S	S	29.0
38	Precision instruments and apparatus	18.7	.3	36.9	–	40.3	–	11.6
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	15.1	.3	19.8	–	29.8	.1	12.3
40	Miscellaneous manufactured products	32.2	1.3	23.9	.2	24.9	.5	11.9
41	Waste and scrap	27.5	.1	31.9	1.0	46.8	1.2	11.1
43	Mixed freight	20.5	2.0	17.7	.6	35.4	1.2	34.0
--	Commodity unknown	30.7	–	S	S	28.5	–	S

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

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

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

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

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

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

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

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
ALL COMMODITIES							
Total	**4.9**	**–**	**11.9**	**–**	**8.6**	**–**	**15.3**
Single modes	**5.6**	**1.9**	**12.1**	**.6**	**8.8**	**2.3**	**18.6**
Truck	5.8	2.0	14.3	3.2	7.7	3.9	19.0
For-hire truck	7.8	2.3	15.2	2.7	7.7	2.1	6.9
Private truck	10.1	3.1	16.8	3.9	16.6	2.4	19.7
Rail	10.6	.5	17.0	3.1	17.8	3.3	6.9
Water	49.5	.2	38.7	1.4	17.0	1.0	S
Shallow draft	S	S	42.7	1.4	17.0	1.0	S
Great Lakes	S	S	S	S	S	S	31.6
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	8.6
Pipeline	S	S	S	S	S	S	S
Multiple modes	**13.2**	**1.4**	**37.7**	**.6**	**38.4**	**2.4**	**9.3**
Parcel, U.S. Postal Service or courier	10.3	.9	13.1	–	16.9	.1	9.4
Truck and rail	34.6	.7	39.9	.2	26.6	.6	11.6
Truck and water	40.6	–	S	S	S	S	22.7
Rail and water	44.3	–	43.2	–	45.2	–	23.7
Other multiple modes	S	S	S	S	S	S	28.4
Other and unknown modes	**31.3**	**1.6**	**21.5**	**.6**	**25.2**	**.8**	**24.9**
SCTG 01, LIVE ANIMALS AND LIVE FISH							
Total	**–**	**–**	**–**	**–**	**–**	**–**	**–**
Single modes	**–**	**–**	**–**	**–**	**–**	**–**	**–**
Truck	–	–	–	–	–	–	–
For-hire truck	–	–	–	–	–	–	–
Private truck	–	–	–	–	–	–	–
Rail	–	–	–	–	–	–	–
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline	–	–	–	–	S	S	S
Multiple modes	**–**	**–**	**–**	**–**	**–**	**–**	**–**
Parcel, U.S. Postal Service or courier	–	–	–	–	–	–	–
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**–**	**–**	**–**	**–**	**–**	**–**	**–**
SCTG 02, CEREAL GRAINS							
Total	**36.4**	**–**	**36.5**	**–**	**35.5**	**–**	**22.6**
Single modes	**38.1**	**5.6**	**38.2**	**5.5**	**37.0**	**5.3**	**23.2**
Truck	31.3	1.3	29.4	1.1	20.8	.3	S
For-hire truck	39.8	1.5	39.8	1.2	32.1	.2	43.1
Private truck	S	S	S	S	S	S	S
Rail	45.4	9.9	45.5	10.1	41.9	9.5	5.2
Water	44.5	9.3	45.8	9.6	23.4	8.8	16.9
Shallow draft	20.5	4.6	20.7	5.1	23.4	8.8	16.7
Great Lakes	S	S	S	S	S	S	31.6
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	31.6
Pipeline	–	–	–	–	S	S	S
Multiple modes	**–**	**–**	**–**	**–**	**–**	**–**	**–**
Parcel, U.S. Postal Service or courier	–	–	–	–	–	–	–
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**31.6**

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 03, OTHER AGRICULTURAL PRODUCTS							
Total	**26.1**	**–**	**31.5**	**–**	**21.0**	**–**	**36.0**
Single modes	**26.0**	**.2**	**31.5**	**.2**	**21.0**	**–**	**36.0**
Truck	33.3	10.1	48.6	12.0	43.8	3.8	37.7
For-hire truck	47.4	10.5	S	S	S	S	30.7
Private truck	42.4	8.8	S	S	40.3	1.7	S
Rail	27.1	7.7	27.9	8.2	32.4	10.2	30.2
Water	24.6	6.2	24.4	9.9	27.4	10.2	16.0
Shallow draft	24.6	6.2	24.4	9.9	27.4	10.2	16.0
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline	–	–	–	–	S	S	S
Multiple modes	**–**	**–**	**–**	**–**	**–**	**–**	**–**
Parcel, U.S. Postal Service or courier	–	–	–	–	–	–	–
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**30.6**
SCTG 04, ANIMAL FEED AND PRODUCTS OF ANIMAL ORIGIN, N.E.C.							
Total	**18.8**	**–**	**28.4**	**–**	**22.6**	**–**	**S**
Single modes	**18.7**	**.3**	**28.4**	**1.8**	**22.9**	**1.2**	**S**
Truck	18.5	7.6	36.2	9.5	25.0	9.7	S
For-hire truck	19.1	6.2	38.5	5.5	33.8	4.0	50.0
Private truck	24.2	4.7	37.9	7.8	30.4	6.5	S
Rail	34.0	4.6	26.9	7.3	29.5	11.9	21.4
Water	49.9	6.2	44.4	9.3	44.4	9.1	25.8
Shallow draft	49.9	6.2	44.4	9.3	44.4	9.1	25.8
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline	–	–	–	–	S	S	S
Multiple modes	**48.5**	**.3**	**S**	**S**	**S**	**S**	**25.8**
Parcel, U.S. Postal Service or courier	–	–	–	–	–	–	–
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	48.5	.3	S	S	S	S	25.8
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**32.1**
SCTG 05, MEAT, FISH, SEAFOOD, AND THEIR PREPARATIONS							
Total	**44.0**	**–**	**45.1**	**–**	**34.8**	**–**	**33.6**
Single modes	**44.0**	**–**	**45.1**	**–**	**34.8**	**–**	**33.8**
Truck	44.0	–	45.1	–	34.8	–	33.8
For-hire truck	S	S	44.9	12.3	43.0	13.4	23.8
Private truck	S	S	S	S	S	S	28.1
Rail	–	–	–	–	–	–	–
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline	–	–	–	–	S	S	S
Multiple modes	**–**	**–**	**–**	**–**	**–**	**–**	**–**
Parcel, U.S. Postal Service or courier	–	–	–	–	–	–	–
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**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 06, MILLED GRAIN PRODUCTS AND PREPARATIONS, AND BAKERY PRODUCTS							
Total	**S**	**S**	**S**	**S**	**S**	**S**	**S**
Single modes	**49.6**	**.9**	**S**	**S**	**47.3**	**3.6**	**S**
Truck	S	S	S	S	S	S	S
For-hire truck	39.5	11.1	S	S	S	S	21.3
Private truck	S	S	S	S	S	S	48.9
Rail	42.8	5.2	45.5	5.8	43.6	9.8	15.9
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**	**28.4**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	30.6
Truck and rail	S	S	S	S	S	S	29.2
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**30.0**
SCTG 07, OTHER PREPARED FOODSTUFFS AND FATS AND OILS							
Total	**25.2**	**–**	**13.4**	**–**	**21.0**	**–**	**S**
Single modes	**25.2**	**.2**	**13.4**	**.3**	**20.0**	**1.9**	**S**
Truck	26.5	1.9	15.6	4.4	26.3	6.7	S
For-hire truck	43.9	10.7	21.4	8.4	31.4	8.2	21.5
Private truck	26.0	10.0	33.7	9.2	33.0	3.6	49.1
Rail	23.7	1.9	27.3	4.3	29.8	5.9	19.0
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline	–	–	–	–	S	S	S
Multiple modes	**46.9**	**.2**	**S**	**S**	**S**	**S**	**31.3**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	31.6
Truck and rail	46.5	.2	S	S	S	S	26.9
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**39.4**
SCTG 08, ALCOHOLIC BEVERAGES							
Total	**25.1**	**–**	**40.6**	**–**	**40.2**	**–**	**18.7**
Single modes	**25.1**	**–**	**40.6**	**–**	**40.2**	**–**	**18.7**
Truck	25.1	–	40.6	–	40.2	–	18.7
For-hire truck	S	S	S	S	S	S	28.1
Private truck	44.0	14.0	44.0	18.2	S	S	25.9
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	**–**	**–**	**–**	**–**	**–**	**–**	**–**

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	**34.3**	**–**	**47.7**	**–**	**26.8**	**–**	**36.7**
Single modes	**34.3**	**–**	**47.7**	**–**	**26.8**	**–**	**36.7**
Truck	34.3	–	47.7	–	26.8	–	36.7
For-hire truck	–	–	–	–	–	–	–
Private truck	34.3	–	47.7	–	26.8	–	36.7
Rail	–	–	–	–	–	–	–
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline	–	–	–	–	S	S	S
Multiple modes	**–**	**–**	**–**	**–**	**–**	**–**	**–**
Parcel, U.S. Postal Service or courier	–	–	–	–	–	–	–
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**–**	**–**	**–**	**–**	**–**	**–**	**–**
SCTG 10, MONUMENTAL OR BUILDING STONE							
Total	**S**	**S**	**S**	**S**	**S**	**S**	**31.6**
Single modes	**S**	**S**	**S**	**S**	**S**	**S**	**31.6**
Truck	S	S	S	S	S	S	31.6
For-hire truck	–	–	–	–	–	–	–
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 11, NATURAL SANDS							
Total	**35.8**	**–**	**42.2**	**–**	**41.5**	**–**	**18.4**
Single modes	**35.9**	**.5**	**42.2**	**.3**	**41.5**	**.2**	**18.1**
Truck	35.9	.5	42.2	.3	41.5	.2	18.1
For-hire truck	S	S	S	S	44.2	12.3	S
Private truck	38.0	10.2	S	S	49.2	12.2	28.0
Rail	–	–	–	–	–	–	–
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline	–	–	–	–	S	S	S
Multiple modes	**–**	**–**	**–**	**–**	**–**	**–**	**–**
Parcel, U.S. Postal Service or courier	–	–	–	–	–	–	–
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**31.6**

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	**35.9**	**–**	**39.6**	**–**	**21.2**	**–**	**19.0**
Single modes	**35.5**	**.6**	**39.6**	**.4**	**21.2**	**1.3**	**18.1**
Truck	37.5	4.1	41.2	3.7	31.2	12.6	17.9
For-hire truck	50.0	4.7	S	S	42.2	6.4	19.5
Private truck	29.1	6.0	31.9	6.5	28.9	10.1	27.0
Rail	–	–	–	–	–	–	–
Water	37.7	3.9	38.3	3.6	42.9	11.7	S
Shallow draft	37.7	3.9	38.3	3.6	42.9	11.7	S
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline	–	–	–	–	S	S	S
Multiple modes	**S**	**S**	**S**	**S**	**S**	**S**	**29.8**
Parcel, U.S. Postal Service or courier	–	–	–	–	–	–	–
Truck and rail	–	–	–	–	–	–	–
Truck and water	S	S	S	S	S	S	31.6
Rail and water	S	S	S	S	S	S	31.6
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**41.6**
SCTG 13, NONMETALLIC MINERALS N.E.C.							
Total	**49.5**	**–**	**S**	**S**	**S**	**S**	**S**
Single modes	**S**	**S**	**S**	**S**	**S**	**S**	**S**
Truck	S	S	S	S	S	S	S
For-hire truck	S	S	S	S	S	S	S
Private truck	S	S	S	S	S	S	27.8
Rail	–	–	–	–	–	–	–
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**	**31.3**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	31.3
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	**41.5**	**–**	**41.7**	**–**	**41.5**	**–**	**22.8**
Single modes	**41.7**	**13.5**	**41.7**	**10.5**	**41.5**	**13.2**	**25.4**
Truck	41.7	13.5	41.7	10.5	41.5	13.2	25.4
For-hire truck	41.8	14.7	41.7	14.8	41.5	14.9	25.9
Private truck	S	S	S	S	S	S	29.8
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**	**35.9**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	35.9
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**31.6**

See footnote at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
SCTG 15, COAL							
Total	**11.9**	**–**	**17.0**	**–**	**35.6**	**–**	**15.8**
Single modes	**12.0**	**4.8**	**16.4**	**4.5**	**32.1**	**8.8**	**16.2**
Truck	34.1	13.3	40.2	13.5	S	S	21.2
For-hire truck	37.8	12.8	45.2	12.9	S	S	21.2
Private truck	S	S	S	S	S	S	27.7
Rail	26.5	12.0	28.5	12.5	25.1	13.3	29.0
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline	–	–	–	–	S	S	S
Multiple modes	**S**	**S**	**S**	**S**	**S**	**S**	**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**	**36.4**
SCTG 17, GASOLINE AND AVIATION TURBINE FUEL							
Total	**36.7**	**–**	**39.6**	**–**	**27.2**	**–**	**28.1**
Single modes	**36.7**	**–**	**39.6**	**–**	**27.2**	**–**	**28.1**
Truck	28.4	13.9	29.3	14.9	29.0	9.9	28.0
For-hire truck	29.9	8.4	31.0	7.9	24.5	7.8	S
Private truck	33.4	11.1	33.2	11.7	39.5	9.6	44.6
Rail	–	–	–	–	–	–	–
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline	S	S	S	S	S	S	S
Multiple modes	**–**	**–**	**–**	**–**	**–**	**–**	**–**
Parcel, U.S. Postal Service or courier	–	–	–	–	–	–	–
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**–**	**–**	**–**	**–**	**–**	**–**	**–**
SCTG 18, FUEL OILS							
Total	**43.4**	**–**	**45.6**	**–**	**38.1**	**–**	**32.6**
Single modes	**43.4**	**–**	**45.6**	**–**	**38.1**	**–**	**32.6**
Truck	42.3	4.4	44.2	4.6	41.9	4.9	33.0
For-hire truck	32.8	6.9	31.3	6.8	37.8	5.9	26.5
Private truck	48.5	8.0	S	S	48.5	7.7	39.2
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	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	**–**	**–**	**–**	**–**	**–**	**–**	**–**

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	**22.3**	**–**	**33.2**	**–**	**31.0**	**–**	**30.2**
Single modes	**28.0**	**13.8**	**38.2**	**14.3**	**32.9**	**14.5**	**31.2**
Truck	28.7	12.9	46.2	13.1	35.6	13.9	33.5
For-hire truck	47.5	10.2	S	S	46.7	8.7	S
Private truck	S	S	S	S	S	S	S
Rail	46.2	4.7	45.1	3.4	S	S	25.0
Water	S	S	S	S	S	S	31.6
Shallow draft	S	S	S	S	S	S	31.6
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	31.6
Pipeline	S	S	S	S	S	S	S
Multiple modes	**S**	**S**	**S**	**S**	**S**	**S**	**S**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	S
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**29.7**
SCTG 20, BASIC CHEMICALS							
Total	**33.3**	**–**	**40.9**	**–**	**43.3**	**–**	**30.2**
Single modes	**32.0**	**4.0**	**41.0**	**.5**	**43.3**	**.3**	**32.2**
Truck	34.5	11.5	S	S	S	S	28.3
For-hire truck	S	S	39.0	7.3	S	S	24.4
Private truck	43.4	11.3	S	S	S	S	36.9
Rail	48.8	8.6	41.4	10.8	S	S	S
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	28.8
Pipeline	–	–	–	–	S	S	S
Multiple modes	**S**	**S**	**S**	**S**	**S**	**S**	**S**
Parcel, U.S. Postal Service or courier	S	S	S	S	38.4	–	S
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**35.5**
SCTG 21, PHARMACEUTICAL PRODUCTS							
Total	**30.7**	**–**	**46.1**	**–**	**46.1**	**–**	**S**
Single modes	**38.8**	**12.7**	**49.1**	**15.8**	**S**	**S**	**S**
Truck	38.9	12.7	49.2	15.8	S	S	S
For-hire truck	44.7	11.3	S	S	S	S	21.9
Private truck	S	S	S	S	S	S	S
Rail	–	–	–	–	–	–	–
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	**37.1**	**12.7**	**37.4**	**15.8**	**33.6**	**15.6**	**33.0**
Parcel, U.S. Postal Service or courier	37.1	12.7	37.4	15.8	33.6	15.6	33.0
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**30.1**

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	**40.3**	**–**	**40.1**	**–**	**31.7**	**–**	**S**
Single modes	**40.2**	**–**	**40.0**	**–**	**31.3**	**.9**	**S**
Truck	44.0	15.5	46.2	15.2	S	S	S
For-hire truck	S	S	S	S	S	S	33.4
Private truck	44.2	16.8	46.5	16.4	S	S	S
Rail	S	S	S	S	S	S	31.6
Water	S	S	S	S	S	S	30.0
Shallow draft	S	S	S	S	S	S	30.0
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline	–	–	–	–	S	S	S
Multiple modes	**–**	**–**	**–**	**–**	**–**	**–**	**–**
Parcel, U.S. Postal Service or courier	–	–	–	–	–	–	–
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**31.6**
SCTG 23, CHEMICAL PRODUCTS AND PREPARATIONS, N.E.C.							
Total	**41.0**	**–**	**48.6**	**–**	**45.7**	**–**	**49.0**
Single modes	**40.1**	**2.9**	**49.1**	**1.4**	**45.9**	**2.2**	**S**
Truck	40.2	3.1	49.7	2.2	47.6	5.3	S
For-hire truck	46.9	10.3	S	S	S	S	24.5
Private truck	48.1	10.3	S	S	S	S	S
Rail	S	S	S	S	S	S	29.3
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	44.7	–	S	S	25.9
Pipeline	–	–	–	–	S	S	S
Multiple modes	**S**	**S**	**S**	**S**	**42.9**	**1.2**	**S**
Parcel, U.S. Postal Service or courier	S	S	S	S	42.9	1.2	S
Truck and rail	–	–	–	–	–	–	–
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	**19.8**	**–**	**20.4**	**–**	**23.6**	**–**	**19.7**
Single modes	**19.9**	**1.8**	**19.2**	**2.5**	**21.2**	**3.2**	**27.1**
Truck	20.1	1.9	19.4	2.9	21.5	3.5	27.6
For-hire truck	26.1	6.8	24.4	6.1	22.9	3.7	10.1
Private truck	25.8	6.5	23.7	5.2	24.2	2.3	S
Rail	S	S	S	S	S	S	30.4
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	27.7
Pipeline	–	–	–	–	S	S	S
Multiple modes	**16.5**	**1.9**	**24.1**	**1.0**	**27.4**	**2.3**	**13.5**
Parcel, U.S. Postal Service or courier	19.5	1.8	28.1	.8	25.7	.8	13.5
Truck and rail	S	S	49.6	.3	48.8	1.8	26.1
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**29.2**

See footnote at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
SCTG 25, LOGS AND OTHER WOOD IN THE ROUGH							
Total	**S**	**S**	**S**	**S**	**S**	**S**	**36.0**
Single modes	**S**	**S**	**S**	**S**	**S**	**S**	**33.4**
Truck	S	S	S	S	S	S	33.4
For-hire truck	S	S	S	S	S	S	31.4
Private truck	S	S	S	S	S	S	28.7
Rail	–	–	–	–	–	–	–
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline	–	–	–	–	S	S	S
Multiple modes	**S**	**S**	**S**	**S**	**S**	**S**	**35.7**
Parcel, U.S. Postal Service or courier	–	–	–	–	–	–	–
Truck and rail	S	S	S	S	S	S	35.7
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**–**	**–**	**–**	**–**	**–**	**–**	**–**
SCTG 26, WOOD PRODUCTS							
Total	**15.4**	**–**	**19.8**	**–**	**33.8**	**–**	**44.4**
Single modes	**15.8**	**2.9**	**19.0**	**1.4**	**35.2**	**6.4**	**47.0**
Truck	15.8	2.9	19.0	1.4	35.2	6.4	47.0
For-hire truck	30.2	8.8	35.7	9.3	39.5	8.2	18.1
Private truck	27.3	9.6	20.6	9.4	30.4	8.7	29.0
Rail	–	–	–	–	–	–	–
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline	–	–	–	–	S	S	S
Multiple modes	**S**	**S**	**S**	**S**	**S**	**S**	**30.6**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	S
Truck and rail	S	S	S	S	S	S	27.7
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**33.8**
SCTG 27, PULP, NEWSPRINT, PAPER, AND PAPERBOARD							
Total	**S**	**S**	**S**	**S**	**S**	**S**	**30.2**
Single modes	**S**	**S**	**S**	**S**	**S**	**S**	**37.8**
Truck	S	S	S	S	S	S	36.9
For-hire truck	43.9	10.9	49.9	12.2	S	S	22.0
Private truck	S	S	S	S	S	S	37.8
Rail	41.7	2.1	41.4	3.4	49.0	6.0	27.3
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	29.3
Pipeline	–	–	–	–	S	S	S
Multiple modes	**S**	**S**	**S**	**S**	**S**	**S**	**19.8**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	19.8
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**S**

See footnote at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
SCTG 28, PAPER OR PAPERBOARD ARTICLES							
Total	**40.8**	**–**	**S**	**S**	**35.7**	**–**	**47.0**
Single modes	**42.5**	**3.4**	**S**	**S**	**36.2**	**9.2**	**42.4**
Truck	42.6	3.4	S	S	36.0	9.2	42.4
For-hire truck	36.2	12.4	48.2	13.1	37.0	13.1	31.0
Private truck	S	S	S	S	44.7	13.8	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	**S**	**S**	**S**	**S**	**S**	**S**	**26.2**
Parcel, U.S. Postal Service or courier	49.2	1.9	S	S	S	S	19.5
Truck and rail	S	S	S	S	S	S	31.5
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**25.8**
SCTG 29, PRINTED PRODUCTS							
Total	**21.7**	**–**	**29.7**	**–**	**27.9**	**–**	**10.8**
Single modes	**27.6**	**7.8**	**31.1**	**4.9**	**27.4**	**3.8**	**23.6**
Truck	28.2	7.7	31.5	5.1	28.6	4.6	32.9
For-hire truck	26.6	7.9	30.8	9.4	30.0	4.7	9.7
Private truck	S	S	S	S	S	S	S
Rail	S	S	S	S	S	S	30.3
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	21.6
Pipeline	S	S	S	S	S	S	S
Multiple modes	**37.4**	**7.8**	**34.4**	**4.9**	**43.4**	**4.0**	**6.3**
Parcel, U.S. Postal Service or courier	37.4	7.7	32.4	4.9	35.2	4.1	6.3
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**47.7**	**.9**	**S**	**S**	**S**	**S**	**35.9**
SCTG 30, TEXTILES, LEATHER, AND ARTICLES OF TEXTILES OR LEATHER							
Total	**17.0**	**–**	**14.9**	**–**	**19.0**	**–**	**10.0**
Single modes	**23.1**	**10.7**	**20.5**	**11.1**	**26.3**	**11.0**	**22.9**
Truck	23.1	10.7	20.5	11.1	26.3	11.0	39.7
For-hire truck	33.5	10.5	33.0	11.5	37.1	12.6	7.1
Private truck	S	S	46.6	13.9	S	S	S
Rail	–	–	–	–	–	–	–
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	30.4
Pipeline	–	–	–	–	S	S	S
Multiple modes	**34.4**	**10.4**	**38.4**	**11.0**	**44.2**	**11.0**	**8.2**
Parcel, U.S. Postal Service or courier	34.4	10.4	38.4	11.0	44.2	11.0	8.2
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**S**

See footnote at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
SCTG 31, NONMETALLIC MINERAL PRODUCTS							
Total	**15.9**	**–**	**41.3**	**–**	**29.7**	**–**	**S**
Single modes	**15.9**	**.2**	**41.5**	**.4**	**29.6**	**.4**	**S**
Truck	16.0	1.0	42.2	2.8	29.5	3.5	S
For-hire truck	15.6	7.8	17.0	16.1	25.0	7.7	13.9
Private truck	32.4	8.3	48.8	17.4	46.6	7.7	S
Rail	44.4	.6	43.3	2.6	46.4	3.4	39.3
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	31.6
Pipeline	–	–	–	–	S	S	S
Multiple modes	**44.9**	**.2**	**S**	**S**	**S**	**S**	**21.1**
Parcel, U.S. Postal Service or courier	27.6	–	29.0	–	28.8	–	21.6
Truck and rail	S	S	S	S	S	S	31.1
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**46.1**
SCTG 32, BASE METAL IN PRIMARY OR SEMIFINISHED FORMS AND IN FINISHED BASIC SHAPES							
Total	**12.2**	**–**	**7.6**	**–**	**13.9**	**–**	**18.2**
Single modes	**14.3**	**3.6**	**10.7**	**4.9**	**17.2**	**8.8**	**18.5**
Truck	16.0	4.5	11.2	6.3	15.5	8.3	18.0
For-hire truck	21.3	6.5	17.5	5.3	20.4	5.9	6.9
Private truck	28.2	6.4	27.8	6.9	31.9	5.0	25.6
Rail	10.9	1.7	20.3	3.1	24.6	4.8	22.7
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	26.9
Pipeline	–	–	–	–	S	S	S
Multiple modes	**S**	**S**	**S**	**S**	**S**	**S**	**30.8**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	30.7
Truck and rail	S	S	S	S	S	S	27.9
Truck and water	S	S	S	S	S	S	29.8
Rail and water	–	–	–	–	–	–	–
Other multiple modes	S	S	S	S	S	S	30.1
Other and unknown modes	**26.2**	**.4**	**31.0**	**.8**	**S**	**S**	**40.0**
SCTG 33, ARTICLES OF BASE METAL							
Total	**40.7**	**–**	**41.8**	**–**	**S**	**S**	**14.2**
Single modes	**39.9**	**3.0**	**39.0**	**1.9**	**S**	**S**	**16.4**
Truck	39.9	2.9	39.0	1.8	S	S	16.3
For-hire truck	45.8	5.0	47.3	5.5	S	S	9.7
Private truck	16.1	6.0	13.3	6.6	23.7	4.9	37.9
Rail	S	S	S	S	S	S	27.9
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	48.9	–	21.6
Pipeline	–	–	–	–	S	S	S
Multiple modes	**S**	**S**	**42.4**	**.7**	**S**	**S**	**8.5**
Parcel, U.S. Postal Service or courier	S	S	50.0	.4	S	S	9.1
Truck and rail	S	S	S	S	S	S	25.8
Truck and water	S	S	S	S	S	S	31.2
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**35.8**

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 34, MACHINERY							
Total	**20.7**	**–**	**19.2**	**–**	**25.4**	**–**	**14.1**
Single modes	**22.3**	**2.8**	**22.4**	**6.0**	**30.6**	**6.7**	**19.1**
Truck	22.5	3.0	22.4	6.0	31.2	7.3	20.3
For-hire truck	22.9	4.5	23.0	5.8	26.3	6.6	9.5
Private truck	33.0	3.8	33.3	5.1	S	S	29.6
Rail	34.1	.5	36.3	.9	36.3	1.8	21.9
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	33.6	.3	30.1	–	29.1	–	8.9
Pipeline	–	–	–	–	S	S	S
Multiple modes	**27.6**	**2.6**	**30.5**	**2.1**	**39.3**	**4.9**	**12.5**
Parcel, U.S. Postal Service or courier	29.3	1.9	39.0	1.1	37.1	1.2	12.2
Truck and rail	S	S	S	S	S	S	26.2
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**33.2**
SCTG 35, ELECTRONIC AND OTHER ELECTRICAL EQUIPMENT AND COMPONENTS AND OFFICE EQUIPMENT							
Total	**20.2**	**–**	**17.6**	**–**	**15.9**	**–**	**13.2**
Single modes	**34.8**	**7.4**	**24.0**	**6.9**	**26.6**	**8.8**	**S**
Truck	37.6	7.9	24.0	6.9	27.0	8.8	S
For-hire truck	15.6	3.3	27.6	7.2	17.5	6.9	3.3
Private truck	S	S	46.8	9.7	S	S	35.0
Rail	–	–	–	–	–	–	–
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	33.5	.1	49.8	.6	14.9
Pipeline	–	–	–	–	S	S	S
Multiple modes	**19.7**	**7.6**	**18.8**	**7.0**	**25.6**	**9.1**	**8.6**
Parcel, U.S. Postal Service or courier	22.4	7.5	32.6	5.0	35.0	6.7	8.8
Truck and rail	44.1	2.7	44.3	7.1	44.1	12.1	25.8
Truck and water	S	S	S	S	S	S	29.8
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**44.2**	**.6**	**S**	**S**	**37.7**
SCTG 36, MOTORIZED AND OTHER VEHICLES (INCLUDING PARTS)							
Total	**14.6**	**–**	**17.8**	**–**	**23.1**	**–**	**27.6**
Single modes	**18.8**	**6.4**	**18.7**	**3.0**	**26.2**	**5.0**	**42.6**
Truck	19.8	6.3	20.4	5.0	32.0	8.4	45.2
For-hire truck	21.9	4.7	23.1	5.2	32.3	7.8	18.1
Private truck	30.6	4.4	40.9	5.3	41.3	2.4	S
Rail	43.5	2.4	45.6	4.5	38.6	6.4	16.8
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	40.6	–	36.0	–	21.4
Pipeline	S	S	S	S	S	S	S
Multiple modes	**41.0**	**5.3**	**38.8**	**2.6**	**44.2**	**5.6**	**32.3**
Parcel, U.S. Postal Service or courier	37.6	.6	S	S	41.2	.7	28.2
Truck and rail	49.3	5.4	47.4	2.6	47.4	5.8	24.6
Truck and water	S	S	S	S	S	S	31.6
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**41.0**	**7.2**	**43.3**	**3.7**	**49.9**	**2.2**	**43.6**

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 37, TRANSPORTATION EQUIPMENT, N.E.C.							
Total	**S**	**S**	**S**	**S**	**S**	**S**	**29.0**
Single modes	**S**	**S**	**S**	**S**	**S**	**S**	**30.0**
Truck	S	S	S	S	S	S	29.8
For-hire truck	S	S	S	S	S	S	31.6
Private truck	S	S	S	S	S	S	30.0
Rail	S	S	S	S	S	S	31.6
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	31.6
Pipeline	–	–	–	–	S	S	S
Multiple modes	**S**	**S**	**S**	**S**	**S**	**S**	**30.0**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	30.0
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**31.6**
SCTG 38, PRECISION INSTRUMENTS AND APPARATUS							
Total	**18.7**	**–**	**36.9**	**–**	**40.3**	**–**	**11.6**
Single modes	**30.1**	**9.8**	**43.0**	**9.5**	**S**	**S**	**37.0**
Truck	32.5	10.1	44.8	10.5	S	S	S
For-hire truck	36.4	9.5	47.1	9.6	S	S	S
Private truck	S	S	S	S	S	S	S
Rail	–	–	–	–	–	–	–
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	34.6
Pipeline	–	–	–	–	S	S	S
Multiple modes	**31.2**	**10.7**	**28.7**	**10.1**	**33.2**	**10.0**	**11.9**
Parcel, U.S. Postal Service or courier	31.2	10.7	28.7	10.1	33.2	10.0	11.9
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**29.9**
SCTG 39, FURNITURE, MATTRESSES AND MATTRESS SUPPORTS, LAMPS, LIGHTING FITTINGS, AND ILLUMINATED SIGNS							
Total	**15.1**	**–**	**19.8**	**–**	**29.8**	**–**	**12.3**
Single modes	**15.1**	**.6**	**20.0**	**.5**	**30.0**	**.7**	**14.7**
Truck	15.1	.8	20.0	.7	30.0	1.2	14.4
For-hire truck	32.5	10.0	36.1	9.3	36.0	4.9	6.1
Private truck	27.2	9.9	34.8	9.4	26.9	4.9	30.1
Rail	S	S	S	S	S	S	30.2
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	32.4
Pipeline	–	–	–	–	S	S	S
Multiple modes	**37.4**	**.6**	**S**	**S**	**S**	**S**	**14.7**
Parcel, U.S. Postal Service or courier	25.8	.4	28.5	.2	30.8	.4	15.4
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	S	S	S	S	S	S	31.6
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**33.1**

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 40, MISCELLANEOUS MANUFACTURED PRODUCTS							
Total	**32.2**	**–**	**23.9**	**–**	**24.9**	**–**	**11.9**
Single modes	**35.4**	**6.3**	**25.0**	**3.5**	**25.9**	**3.2**	**16.1**
Truck	35.3	6.2	25.0	3.5	25.9	3.2	17.4
For-hire truck	41.1	6.7	30.2	6.5	27.4	5.8	5.8
Private truck	29.5	4.7	30.5	5.3	36.6	4.3	S
Rail	S	S	S	S	S	S	31.6
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	44.1	–	S	S	S	S	33.6
Pipeline	–	–	–	–	S	S	S
Multiple modes	**17.1**	**6.1**	**43.7**	**2.3**	**S**	**S**	**9.4**
Parcel, U.S. Postal Service or courier	17.1	6.1	43.7	2.3	S	S	9.4
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**S**
SCTG 41, WASTE AND SCRAP							
Total	**27.5**	**–**	**31.9**	**–**	**46.8**	**–**	**11.1**
Single modes	**27.6**	**2.3**	**31.1**	**2.5**	**40.6**	**6.8**	**10.9**
Truck	33.2	9.7	32.9	10.8	40.1	14.3	15.5
For-hire truck	39.0	11.5	43.9	8.7	49.8	10.8	20.8
Private truck	S	S	S	S	S	S	13.7
Rail	41.5	9.1	43.3	10.0	S	S	S
Water	S	S	S	S	S	S	31.6
Shallow draft	S	S	S	S	S	S	31.6
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline	–	–	–	–	S	S	S
Multiple modes	**S**	**S**	**S**	**S**	**S**	**S**	**31.6**
Parcel, U.S. Postal Service or courier	–	–	–	–	–	–	–
Truck and rail	–	–	–	–	–	–	–
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**	**29.8**
SCTG 43, MIXED FREIGHT							
Total	**20.5**	**–**	**17.7**	**–**	**35.4**	**–**	**34.0**
Single modes	**21.0**	**.8**	**17.9**	**.8**	**35.6**	**.5**	**35.8**
Truck	21.0	.9	17.9	.8	35.8	.7	29.6
For-hire truck	14.2	6.9	17.8	5.8	36.9	5.7	24.4
Private truck	26.2	7.4	22.5	5.7	35.9	5.3	23.5
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	27.2
Pipeline	–	–	–	–	S	S	S
Multiple modes	**26.4**	**.9**	**40.8**	**.2**	**30.0**	**.4**	**24.1**
Parcel, U.S. Postal Service or courier	26.4	.9	40.8	.2	30.0	.4	24.1
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**39.3**	**.2**	**S**

See footnote at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
COMMODITY UNKNOWN							
Total	**30.7**	**–**	**S**	**S**	**28.5**	**–**	**S**
Single modes	**40.3**	**12.6**	**S**	**S**	**33.7**	**9.9**	**S**
Truck	40.1	12.4	S	S	29.0	13.5	S
For-hire truck	S	S	S	S	43.4	14.0	18.6
Private truck	S	S	29.6	5.9	38.7	10.7	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	**S**	**S**	**S**	**S**	**S**	**S**	**21.6**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	21.6
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**S**

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

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

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

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

State of destination	Value		Tons		Ton-miles	
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage
Total	**4.9**	**–**	**11.9**	**–**	**8.6**	**–**
NEW ENGLAND STATES						
Connecticut	18.8	–	24.0	–	22.3	–
Maine	39.6	–	33.9	–	34.6	–
Massachusetts	30.1	.2	21.4	–	20.5	.1
New Hampshire	42.0	–	34.4	–	33.8	–
Rhode Island	45.4	–	S	S	S	S
Vermont	38.5	–	S	S	S	S
MIDDLE ATLANTIC STATES						
New Jersey	26.6	.3	24.3	.1	24.3	.2
New York	20.9	.3	22.6	.2	23.0	.7
Pennsylvania	15.0	.3	14.9	.2	15.5	.2
EAST NORTH CENTRAL STATES						
Illinois	9.5	.7	14.1	1.0	21.5	.5
Indiana	7.6	2.4	19.9	4.6	13.4	1.9
Michigan	8.2	.6	6.9	.4	9.6	.7
Ohio	11.3	.7	5.2	.4	6.0	.4
Wisconsin	13.7	.2	37.4	.5	35.6	.4
WEST NORTH CENTRAL STATES						
Iowa	23.3	.3	24.8	.2	23.2	.3
Kansas	41.5	.4	44.0	.2	45.3	.4
Minnesota	13.9	.2	27.8	.2	25.6	.2
Missouri	26.4	.7	20.5	.2	20.6	.3
Nebraska	39.3	.3	45.2	.1	48.0	.5
North Dakota	40.9	.1	S	S	S	S
South Dakota	S	S	40.5	–	38.1	–
SOUTH ATLANTIC STATES						
Delaware	S	S	43.0	–	44.8	–
District of Columbia	34.9	–	S	S	S	S
Florida	16.1	.4	37.8	.3	44.6	1.8
Georgia	15.1	.3	S	S	S	S
Maryland	26.9	.2	45.0	.3	49.3	.8
North Carolina	13.9	.1	15.1	.2	17.6	.6
South Carolina	13.1	.1	S	S	S	S
Virginia	17.4	.2	33.1	.1	32.3	.2
West Virginia	21.4	–	28.3	.2	30.5	.2
EAST SOUTH CENTRAL STATES						
Alabama	13.7	.1	33.8	.4	42.3	1.3
Kentucky	18.8	1.3	16.5	.6	12.8	.3
Mississippi	S	S	S	S	S	S
Tennessee	14.6	.3	11.8	.3	16.2	.7
WEST SOUTH CENTRAL STATES						
Arkansas	19.2	.1	33.5	.2	33.7	.3
Louisiana	18.1	–	12.7	.2	14.1	.8
Oklahoma	48.2	.3	S	S	S	S
Texas	18.7	.8	17.9	.2	16.7	1.6
MOUNTAIN STATES						
Arizona	46.8	.2	31.2	–	31.8	.2
Colorado	19.3	.1	28.5	–	29.5	.2
Idaho	S	S	S	S	S	S
Montana	S	S	45.1	–	43.3	–
Nevada	23.2	–	34.9	–	36.4	–
New Mexico	40.5	–	S	S	S	S
Utah	46.3	.1	38.4	–	38.5	–
Wyoming	S	S	39.5	–	41.1	–
PACIFIC STATES						
Alaska	40.3	–	43.7	–	41.8	–
California	18.9	.6	23.4	.3	22.8	2.2
Hawaii	31.9	–	42.4	–	43.2	–
Oregon	25.5	.1	30.3	–	30.5	.5
Washington	17.9	–	31.7	–	30.8	.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	**3.6**	**–**	**10.5**	**–**	**5.8**	**–**
NEW ENGLAND STATES						
Connecticut	13.8	–	15.7	–	15.9	–
Maine	25.2	–	35.0	–	35.4	–
Massachusetts	24.9	.2	S	S	S	S
New Hampshire	21.5	–	S	S	S	S
Rhode Island	23.1	–	25.2	–	26.5	–
Vermont	16.7	–	36.4	–	36.0	–
MIDDLE ATLANTIC STATES						
New Jersey	23.6	.2	16.0	–	16.7	–
New York	16.3	.2	29.1	–	28.6	.2
Pennsylvania	16.8	.4	20.0	.1	23.0	.3
EAST NORTH CENTRAL STATES						
Illinois	10.9	1.1	39.2	4.3	23.9	1.6
Indiana	7.6	1.8	19.9	5.1	13.4	1.8
Michigan	12.8	.9	17.0	.4	15.7	.4
Ohio	17.7	1.8	16.9	1.0	16.6	.7
Wisconsin	11.3	.2	15.0	.1	17.6	.3
WEST NORTH CENTRAL STATES						
Iowa	8.4	.1	12.4	–	13.7	–
Kansas	16.6	–	19.7	–	20.8	–
Minnesota	14.4	.2	29.0	1.3	29.5	4.8
Missouri	11.9	.2	15.3	.2	13.6	.3
Nebraska	22.5	.1	26.2	–	27.2	.1
North Dakota	20.0	–	31.0	–	31.0	–
South Dakota	S	S	28.8	–	27.4	–
SOUTH ATLANTIC STATES						
Delaware	34.0	–	23.0	–	23.7	–
District of Columbia	S	S	S	S	S	S
Florida	16.7	.2	24.9	–	25.9	.4
Georgia	22.4	.3	14.6	–	18.6	.2
Maryland	24.2	–	46.5	.1	49.0	.3
North Carolina	33.4	.6	15.7	–	12.8	.1
South Carolina	13.1	.1	22.6	–	23.3	.1
Virginia	16.6	.2	25.2	.2	24.7	.5
West Virginia	18.8	–	45.1	1.7	45.1	2.7
EAST SOUTH CENTRAL STATES						
Alabama	10.6	.1	17.5	.1	18.7	.2
Kentucky	13.0	.4	16.8	.4	33.5	.4
Mississippi	18.3	–	21.9	–	20.8	.1
Tennessee	14.3	.4	8.5	–	9.3	–
WEST SOUTH CENTRAL STATES						
Arkansas	19.1	.1	12.7	–	11.8	.1
Louisiana	24.1	.1	26.4	–	24.9	.1
Oklahoma	28.4	.1	22.6	–	22.2	.1
Texas	16.0	.3	14.1	.1	16.9	.7
MOUNTAIN STATES						
Arizona	37.6	.3	38.7	–	38.6	–
Colorado	32.4	–	26.5	–	26.3	–
Idaho	21.1	–	27.4	–	26.8	–
Montana	20.2	–	45.9	.2	44.5	.8
Nevada	45.5	.1	27.9	–	26.5	–
New Mexico	28.8	–	30.0	–	30.6	–
Utah	39.6	.2	S	S	S	S
Wyoming	18.4	–	32.6	1.3	32.4	5.8
PACIFIC STATES						
Alaska	S	S	S	S	S	S
California	32.0	1.3	16.3	–	15.6	.4
Hawaii	S	S	S	S	S	S
Oregon	20.9	–	S	S	S	S
Washington	20.4	–	17.4	–	17.2	–

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

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

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

Mode of transportation	Value			Tons			Ton-miles			Average miles per shipment		
	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change
	2002	1997		2002	1997		2002	1997		2002	1997	
Total	**4.9**	**4.6**	**9.1**	**11.9**	**10.8**	**19.0**	**8.6**	**6.4**	**15.4**	**15.3**	**9.4**	**29.0**
Single modes	**5.6**	**5.3**	**10.5**	**12.1**	**10.5**	**19.0**	**8.8**	**5.4**	**14.8**	**18.6**	**17.9**	**15.2**
Truck	5.8	5.4	10.9	14.3	10.3	20.4	7.7	4.5	12.4	19.0	18.0	19.9
Rail	10.6	12.6	15.9	17.0	18.8	24.6	17.8	10.3	31.1	6.9	9.7	15.2
Water	49.5	47.4	66.8	38.7	41.7	106.1	17.0	33.3	49.1	S	S	S
Air (includes truck and air)	S	21.2	S	S	23.3	S	S	35.7	S	8.6	5.1	11.6
Pipeline	S	25.5	S	S	27.1	S	S	S	S	S	S	S
Multiple modes	**13.2**	**12.5**	**26.1**	**37.7**	**S**	**S**	**38.4**	**36.9**	**85.1**	**9.3**	**6.4**	**15.9**
Parcel, U.S. Postal Service or courier	10.3	10.3	22.1	13.1	8.5	18.8	16.9	7.3	26.4	9.4	6.5	16.0
Truck and rail	34.6	30.2	55.3	39.9	S	S	26.6	30.5	40.1	11.6	6.1	13.7
All other multiple modes	S	S	S	S	S	S	S	S	S	23.1	S	S
Other and unknown modes	**31.3**	**16.9**	**53.4**	**21.5**	**26.2**	**47.3**	**25.2**	**31.2**	**52.3**	**24.9**	**22.9**	**26.7**

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

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

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

SCTG code	Commodity description	Value			Tons			Ton-miles			Average miles per shipment		
		Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change
		2002	1997		2002	1997		2002	1997		2002	1997	
	Total	**4.9**	**4.6**	**9.1**	**11.9**	**10.8**	**19.0**	**8.6**	**6.4**	**15.4**	**15.3**	**9.4**	**29.0**
01-05	Agricultural products and fish	19.2	13.4	16.3	25.6	10.3	34.8	26.0	13.7	56.0	S	14.5	S
06-09	Grains, alcohol, and tobacco products	21.0	7.8	28.3	22.8	11.2	32.9	22.2	9.0	24.0	S	26.5	S
10-14	Stones, nonmetallic minerals, and metallic ores	20.6	16.9	31.6	30.1	22.2	37.3	25.6	18.9	30.3	45.6	23.4	37.5
15-19	Coal and petroleum products	27.5	21.2	44.0	18.1	25.2	34.2	16.7	24.7	35.3	18.1	25.0	47.9
20-24	Basic chemicals, chemical, and pharmaceutical products	22.4	22.4	38.3	23.6	25.2	40.0	24.0	21.0	61.4	25.3	11.7	20.7
25-30	Logs, wood products, and textile and leather	9.8	21.4	23.0	26.6	9.5	43.1	40.5	14.4	73.5	11.1	11.1	19.0
31-34	Base metal and machinery	12.5	5.3	17.2	13.6	6.7	19.3	9.7	9.0	17.2	16.3	15.4	21.4
35-38	Electronic, motorized vehicles, and precision instruments	9.3	7.1	17.4	18.5	7.2	31.0	18.4	8.0	31.9	15.8	9.4	47.5
39-43	Furniture, mixed freight and misc. manufactured prod.	12.9	8.7	38.6	15.7	11.1	33.4	19.8	10.3	44.6	18.9	8.5	14.7
--	Commodity unknown	30.7	S	S	S	34.8	S	28.5	41.6	10.5	S	26.1	S

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

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Appendix C. Sample Design, Data Collection, and Estimation

INTRODUCTION

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

SAMPLE DESIGN

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

First Stage

Sampling frame

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

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

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

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

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

Stratification

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

Sample size and allocation

To reduce the sampling variability of the estimates, we used a stratified design with a certainty component. Within each primary stratum, a boundary (or cutoff) that divides the certainty establishments from the noncertainty establishments was determined using the Lavallee-Hidiroglou algorithm. If an establishment's measure of size was greater than the cutoff, the establishment was selected with certainty. Establishments selected with certainty were sure to be selected and represent only themselves (i.e., had a selection probability of one and a sampling weight of one).

Because the 2002 sample was about half the size of the 1997 CFS sample, we were concerned about the ability of the sample to capture less frequent types of shipments (e.g., air, water, rail, and hazardous materials). After considering several different alternatives, we felt the best approach was to identify those establishments which made the bulk of these types of shipments in 1997 and then select them with certainty. To identify these establishments, we proceeded as follows.

We identified all establishments in the 1997 CFS sample that reported shipments made by air, water, or rail. We also identified those establishments that reported shipments of hazardous materials. For each of these establishments, we computed the percentage of the establishment's total value and tonnage accounted for by each of these types of shipments. Next, we matched these establishments to the sampling frame for the 2002 CFS and identified each establishment with measure of size less than the certainty boundary. For both value and tons, we then looked to see what percent of the total volume of shipments for each type of shipment was captured by selecting with certainty the top 50, top 100, or all establishments. We considered the top 50 establishments as those establishments making the largest volume of each type of shipment (air, water, rail, hazardous). Once these establishments were identified, we grouped them into one file and unduplicated them. This procedure added a total of about 500 certainty establishments.

Establishments not selected with certainty made up the noncertainty frame. We further stratified the noncertainty establishments within each primary stratum using the measure of size previously described. We refer to these measure-of-size strata as *substrata* of the primary strata. The measure of size stratification increased the efficiency of the sample design. The Dalenius-Hodges

cumulative $\sqrt{f}$ rule was used to set the substratum boundaries. We then used optimum allocation to determine the sample size required within each substratum to meet a coefficient of variation constraint on an estimate of the total measure of size for the primary stratum. Within each substratum, a simple random sample of establishments was selected without replacement.

To arrive at the final sample size, we allocated additional establishments to some of the strata so that the minimum substratum sample size was two and the probability of selecting any establishment was no less than 1 in 100. In total, the first-stage sample comprised 51,005 establishments.

Second Stage

The frame for the second stage of sampling consisted of 52-weeks from January 6, 2002 to January 4, 2003. Each establishment selected into the 2002 CFS sample was systematically assigned to report for four reporting weeks-one in each quarter of the reference year. Each of the 4-weeks was in the same relative position of the quarter. For example, an establishment might have been requested to report data for the 5th, 18th, 31st, and 44th weeks of the reference year. In this instance, each reporting week corresponds to the 5th week of each quarter. Prior to assignment of weeks to establishments, we sorted the selected sample by primary stratum (state x metropolitan area x industry) and measure-of-size.

Third Stage

For each of the four reporting weeks in which an establishment was asked to report, we requested the respondent to construct a sampling frame consisting of all shipments made by the establishment in the reporting week. Each respondent was asked to count or estimate the total number of shipments comprising the sampling frame and to record this number on the questionnaire. For each assigned reporting week, if an establishment made *more than 40* shipments during that week, we asked the respondent to select a systematic sample of the establishment's shipments and to provide us with information only about the selected shipments. If an establishment made *40 or fewer* shipments during that week, we asked the respondent to provide information about *all* of the establishment's shipments made during that week; i.e., no sampling was required.

DATA COLLECTION

Each establishment selected into the CFS sample was mailed a questionnaire for each of its four reporting weeks. We mailed each establishment a questionnaire once every quarter of 2002. For a given establishment, we requested that the respondent provide the following information about each of the establishment's reported shipments: shipment identification number, the date on which the shipment was made, value, weight, commodity, mode(s) of transportation, domestic destination or port of exit, an indication of whether the shipment was an export, and the United Nations or North America (UN/NA) number for hazardous material shipments. For a shipment that included more than one commodity, the respondent was instructed to report the commodity that made up the greatest percentage of the shipment's *weight*. For an export shipment, we also asked the respondent to provide the mode of export and the foreign destination city and country. See Appendix E for a copy of the questionnaire.

IMPUTATION OF SHIPMENT VALUE OR WEIGHT

To correct for nonresponse to *either* the value *or* weight item for a given shipment reported in the CFS, the missing value or value that failed edit is replaced by a predicted value obtained from an appropriate model. Such a shipment is considered a "recipient" if its commodity code is valid and the other item is reported greater than zero and passed edit. The recipient's item that is missing or failed edit is imputed as follows. First, a "donor" shipment is randomly selected from shipments that were reported in the CFS with:

- The same commodity code as the recipient.
- Both value and weight items reported greater than zero and passed edit.
- Origin and value for the item reported by the recipient similar to those of the recipient.

Then, the donor's value and weight data are used to calculate a ratio, which is applied to the recipient's reported item, to impute the item that is missing or failed edit. If no donor is found, the median ratio for all shipments reported in the survey with the same commodity code as the recipient and with both value and weight items reported greater than zero is applied to the recipient's reported item. For either the value or weight item, about 3 percent of the shipment records input to the calculation of estimates have imputed data for the item.

ESTIMATION

Estimated totals (e.g., value of shipments, tons, ton-miles) are produced as the sum of weighted shipment data (reported or imputed). Percent change and percent-of-total estimates are derived using the appropriate estimated totals. Estimates of average miles per shipment are computed by dividing an estimate of the total miles traveled by the estimated number of shipments. The annualized growth rate $\hat{A}$ for estimates from year y_1 to y_2 is computed as:

$$\hat{A} = 100 * \left(\left(\frac{\hat{X}_{y_2}}{\hat{X}_{y_1}} \right)^{1/(y_2 - y_1)} - 1 \right)$$

where $\hat{X}_{y_1}$ and $\hat{X}_{y_2}$ are estimates of the value of shipments, tons, ton-miles, or average miles per shipment for years y_1 and y_2, respectively. The annualized growth rate measures the annual rate of change between estimates from any 2 years by assuming a constant yearly rate of change.

Each *shipment* has associated with it a single *tabulation weight,* which was used in computing all estimates to which the shipment contributes. The tabulation weight is a product of seven different component weights. A description of each component weight follows.

CFS respondents provided data for a sample of shipments made by their respective establishments in the survey year. For each establishment, we produced an estimate of that establishment's total value of shipments for the entire survey year. To do this, we used four different weights, the *shipment weight,* the *shipment nonresponse weight,* the *quarter weight,* and the *quarter nonresponse weight.*

Like establishments, we identified shipments as either certainty or noncertainty. (See the Nonsampling Error section in Appendix B for a description of how certainty shipments were identified.) For noncertainty shipments, the *shipment weight* was defined as the ratio of the total number of shipments (as reported by the respondent) made by an establishment in a reporting week to the number of sampled shipments for the same week. This weight uses data from the sampled shipments to represent all the establishment's shipments made in the reporting week. However, a respondent may have failed to provide sufficient information about a particular sampled shipment. For example, a respondent may not have been able to provide value, weight, or a destination for one of the sampled shipments. If this data item could not be imputed, then this shipment did not contribute to tabulations and was deemed unusable. (A *usable shipment* is one that has valid entries for value, weight, and origin and destination ZIP Codes.) To account for these unusable shipments, we applied the *shipment nonresponse weight.* For noncertainty shipments from a particular establishment's reporting week, this weight is equal to the ratio of the number of sampled shipments for the reporting week to the number of usable shipments for the same week. The shipment weight for certainty shipments from a particular establishment's reporting week is equal to one.

The *quarter weight* inflates an establishment's estimate for a particular reporting week to an estimate for the corresponding quarter. For noncertainty shipments, the quarter weight is equal to 13. The quarter weight for most certainty shipments is also equal to 13. However, if a respondent was able to provide information about all large (or certainty) shipments made in the quarter containing the reporting week, then the quarter weight for each of these shipments was one. For each establishment, the quarterly estimates were added to produce an estimate of the establishment's value of shipments for the entire survey year. Whenever an establishment did not provide the Census Bureau with a response for each of its four reporting weeks, we computed a quarter nonresponse

weight. The *quarter nonresponse weight* for a particular establishment is defined as the ratio of the number of quarters for which the establishment was in business in the survey year to the total number of quarters (reporting weeks) for which we received usable shipment data from the establishment.

Using these four component weights, we computed an estimate of each establishment's value of shipments for the entire survey year. We then multiplied this estimate by a factor that adjusts the estimate using value of shipments and sales data obtained from other surveys and censuses conducted by the Census Bureau. This weight, the *establishment-level adjustment weight,* attempts to correct for any sampling or nonsampling errors that occur during the sampling of shipments by the respondent.

The adjusted value of shipments estimate for an establishment was then weighted by the *establishment weight*. This weight is equal to the reciprocal of the establishment's probability of being selected into the sample.

A final adjustment weight, the *industry-level adjustment weight,* uses information from other surveys and censuses conducted by the Census Bureau to account for establishments from which we did not receive a response (including establishments from which we did not receive any usable shipment data) and for changes in the population of establishments between the time the first-stage sampling frame was constructed (2001) and the year in which the data were collected (2002). Separate industry-level adjustment weights were determined for nonauxiliary and auxiliary establishments.

Appendix D.
Standard Classification of Transported Goods Code Information

The commodities shown in this report are classified using the Standard Classification of Transported Goods (SCTG) coding system. The SCTG coding system was created jointly by agencies of the United States and Canadian governments based on the Harmonized System of product classification that is used worldwide. The purpose of the SCTG coding system was to specifically address statistical needs in regard to products transported.

In 1993, Commodity Flow Survey (CFS) data were collected and reported using product classifications found in the Standard Transportation Commodity Classification (STCC) system. These classifications were developed in the early 1960s by the American Association of Railroads (AAR) to analyze commodity movements by rail. The original purpose of the STCC was for identification of commodities for purposes of assigning rates for Interstate Commerce Commission (ICC) regulated rail carriers. The STCC continues to be used by the AAR as a tariff mechanism.

At the time that the Commodity Transportation Survey (CTS) (the CTS—the predecessor of the CFS) was first conducted in 1963, STCC codes were still useful for analyzing most important aspects of the U.S. transportation system. Since then, many changes have taken place that have gradually made the STCC code less useful for tracking domestic product movements across all modes (although it remains perfectly functional for tracking rail-only movements). These include the deregulation of trucking, the enactment of North American Free Trade Agreement (NAFTA), changes in logistics practices, the emergence of plastics and composite materials to replace metals and glass, the obsolescence of many categories of wood products, and the very rapid recent development of high-tech electronic goods. Because the CFS is a shipper survey, the CFS collects information about shipments moving on all modes. As a consequence, STCC classifications frequently provide inadequate detail for identifying products that are significant for modes, such as truck and air. It is for these reasons that the Bureau of Transportation Statistics (BTS) has sponsored the development of a new product code to collect and report CFS data.

In 1997 and 2002, the CFS provided respondents with a listing of SCTG codes and descriptions at the five-digit level to use in assigning a commodity code for each shipment. For shipments of more than one commodity, we instructed respondents to use the five-digit code for the major commodity, defined as the commodity of greatest total weight in the shipment. For the data presented on this report, we aggregated the SCTG codes to the two-digit level.