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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	v
2002 Commodity Flow Survey	ix
 Tables	
1a. Shipment Characteristics by Mode of Transportation for State of Origin: 2002	1
1b. Shipment Characteristics by Mode of Transportation for State of Origin: Percent of Total for 2002 and 1997	1
2. Shipment Characteristics by Total Modal Activity for State of Origin: 2002	2
3. Shipment Characteristics by Mode of Transportation and Distance Shipped for State of Origin: 2002	3
4. Shipment Characteristics by Mode of Transportation and Shipment Weight for State of Origin: 2002	6
5a. Shipment Characteristics by Two-Digit Commodity for State of Origin: 2002	9
5b. Shipment Characteristics by Two-Digit Commodity for State of Origin: Percent of Total for 2002 and 1997	10
6. Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 2002	11
7. Outbound Shipment Characteristics by State of Destination for State of Origin: 2002	26
8. Inbound Shipment Characteristics by State of Origin for State of Destination: 2002	27
9. Shipment Characteristics by Mode of Transportation for State of Origin: 2002 and 1997	30
10. Shipment Characteristics by Commodity Group for State of Origin: 2002 and 1997	30
 Appendixes	
A. Comparability With the 1997 Commodity Flow Survey	A-1
B. Reliability of the Estimates	B-1
C. Sample Design, Data Collection, and Estimation	C-1
D. Standard Classification of Transported Goods Code Information	D-1

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

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

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

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

BASIS OF REPORTING

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

AVAILABILITY OF ADDITIONAL DATA

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

HISTORICAL INFORMATION

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

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

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

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

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

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

SOURCES FOR MORE INFORMATION

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

2002 Commodity Flow Survey

GENERAL

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

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

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

INDUSTRY COVERAGE

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

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

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

See Appendix A for a comparison between the 2002, 1997, and 1993 surveys. Also see Appendix C for a more detailed discussion on industry coverage and the sample design. The NAICS industries covered in the 2002 CFS are listed in the following table:

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

SHIPMENT COVERAGE

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

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

MILEAGE CALCULATIONS

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

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

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

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

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

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

Mileage Data for Pipeline Shipments

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

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

EXPLANATION OF TERMS

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

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

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

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

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

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

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

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

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

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

Mode Definitions

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

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

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

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

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

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

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

Other Definitions and Terms

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

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

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

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

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

ABBREVIATIONS AND SYMBOLS

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

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

OTHER TRANSPORTATION DATA

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

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

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

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

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

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

Mode of transportation	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
Total	217 451	100.0	229 502	100.0	70 753	100.0	642
Single modes	179 774	82.7	218 134	95.0	66 184	93.5	203
Truck ²	172 120	79.2	169 843	74.0	34 949	49.4	183
For-hire truck	102 267	47.0	89 144	38.8	26 143	36.9	476
Private truck	69 085	31.8	80 346	35.0	8 671	12.3	86
Rail	4 190	1.9	37 956	16.5	22 347	31.6	787
Water	S	S	S	S	S	S	1 227
Shallow draft	S	S	S	S	S	S	1 455
Great Lakes	S	S	S	S	S	S	1
Deep draft	S	S	S	S	S	S	992
Air (includes truck and air)	1 993	.9	55	—	65	—	1 243
Pipeline ³	S	S	S	S	S	S	S
Multiple modes	29 984	13.8	2 435	1.1	2 928	4.1	911
Parcel, U.S. Postal Service or courier	22 439	10.3	749	.3	607	.9	909
Truck and rail	S	S	1 673	.7	2 279	3.2	1 408
Truck and water	28	—	S	S	S	S	4 645
Rail and water	S	S	S	S	S	S	4 733
Other multiple modes	S	S	S	S	S	S	1 256
Other and unknown modes	7 693	3.5	8 933	3.9	1 641	2.3	S

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

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

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

³Estimates for pipeline exclude shipments of crude petroleum.

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

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

Table 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	82.7	85.7	95.0	98.1	93.5	94.0
Truck ²	79.2	81.2	74.0	89.5	49.4	71.7
For-hire truck	47.0	51.5	38.8	34.2	36.9	54.8
Private truck	31.8	28.7	35.0	54.4	12.3	15.8
Rail	1.9	2.2	16.5	6.3	31.6	16.0
Water	S	.3	S	1.3	S	S
Shallow draft	S	S	S	S	S	S
Great Lakes	S	S	S	.9	S	S
Deep draft	S	S	S	S	S	S
Air (includes truck and air) .....	.9	1.7	—	—	—	.1
Pipeline ³	S	.3	S	1.0	S	S
Multiple modes	13.8	11.1	1.1	.5	4.1	2.7
Parcel, U.S. Postal Service or courier	10.3	10.6	.3	.3	.9	1.0
Truck and rail	S	.5	.7	.2	3.2	1.5
Truck and water	—	S	S	S	S	S
Rail and water	S	S	S	S	S	S
Other multiple modes	S	S	S	S	S	S
Other and unknown modes	3.5	3.2	3.9	1.3	2.3	3.3

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

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

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

³Estimates for pipeline exclude shipments of crude petroleum.

Note: Value-of-shipments estimates have not been adjusted for price changes. Appendix B tables provide estimated measures of sampling variability. The Introduction and appendixes give information on 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	70 753	100.0	642
Truck	34 949	49.4	183
Rail	22 347	31.6	787
Shallow draft	S	S	1 455
Great Lakes	S	S	1
Deep draft	S	S	992
Air	65	—	1 243
Parcel, U.S. Postal Service or courier	S	S	182
Pipeline ³	S	S	S
Other and unknown modes	1 641	2.3	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.

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

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

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

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

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

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

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

Mode of transportation and distance shipped ¹ (based on Great Circle Distance)	Value		Tons		Ton-miles ²	
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent
Total	217 451	100.0	229 502	100.0	70 753	100.0
Less than 50 miles	48 005	22.1	103 764	45.2	1 721	2.4
50 to 99 miles	26 682	12.3	31 413	13.7	3 113	4.4
100 to 249 miles	36 747	16.9	29 012	12.6	6 335	9.0
250 to 499 miles	35 227	16.2	28 799	12.5	14 037	19.8
500 to 749 miles	23 749	10.9	11 006	4.8	9 183	13.0
750 to 999 miles	25 093	11.5	18 164	7.9	23 066	32.6
1,000 to 1,499 miles	10 019	4.6	3 853	1.7	5 707	8.1
1,500 to 1,999 miles	11 556	5.3	3 461	1.5	7 437	10.5
2,000 miles or more	S	S	S	S	S	S
Single modes	179 774	100.0	218 134	100.0	66 184	100.0
Less than 50 miles	44 306	24.6	99 444	45.6	1 608	2.4
50 to 99 miles	24 746	13.8	28 920	13.3	2 898	4.4
100 to 249 miles	33 385	18.6	27 722	12.7	6 089	9.2
250 to 499 miles	28 909	16.1	28 252	13.0	13 788	20.8
500 to 749 miles	18 201	10.1	10 150	4.7	8 459	12.8
750 to 999 miles	16 111	9.0	17 364	8.0	22 214	33.6
1,000 to 1,499 miles	6 951	3.9	3 418	1.6	5 056	7.6
1,500 to 1,999 miles	7 159	4.0	2 863	1.3	6 071	9.2
2,000 miles or more	5	—	—	—	1	—
Truck³	172 120	100.0	169 843	100.0	34 949	100.0
Less than 50 miles	43 488	25.3	91 019	53.6	1 504	4.3
50 to 99 miles	24 024	14.0	19 485	11.5	1 699	4.9
100 to 249 miles	33 014	19.2	24 066	14.2	5 029	14.4
250 to 499 miles	27 115	15.8	17 895	10.5	7 679	22.0
500 to 749 miles	17 293	10.0	7 614	4.5	6 050	17.3
750 to 999 miles	14 069	8.2	5 616	3.3	5 866	16.8
1,000 to 1,499 miles	6 662	3.9	2 335	1.4	3 389	9.7
1,500 to 1,999 miles	6 454	3.7	1 812	1.1	3 733	10.7
2,000 miles or more	S	S	S	S	S	S
For-hire truck	102 267	100.0	89 144	100.0	26 143	100.0
Less than 50 miles	11 943	11.7	39 990	44.9	708	2.7
50 to 99 miles	11 954	11.7	9 316	10.5	794	3.0
100 to 249 miles	19 156	18.7	12 566	14.1	2 670	10.2
250 to 499 miles	21 365	20.9	12 427	13.9	5 507	21.1
500 to 749 miles	14 260	13.9	6 271	7.0	5 003	19.1
750 to 999 miles	11 844	11.6	4 876	5.5	5 088	19.5
1,000 to 1,499 miles	5 756	5.6	2 063	2.3	3 009	11.5
1,500 to 1,999 miles	5 988	5.9	1 635	1.8	3 364	12.9
2,000 miles or more	S	S	S	S	S	S
Private truck	69 085	100.0	80 346	100.0	8 671	100.0
Less than 50 miles	31 490	45.6	50 934	63.4	793	9.1
50 to 99 miles	12 063	17.5	10 135	12.6	902	10.4
100 to 249 miles	13 463	19.5	11 404	14.2	2 340	27.0
250 to 499 miles	5 687	8.2	5 439	6.8	2 159	24.9
500 to 749 miles	2 983	4.3	1 324	1.6	1 031	11.9
750 to 999 miles	2 030	2.9	665	.8	702	8.1
1,000 to 1,499 miles	902	1.3	267	.3	374	4.3
1,500 to 1,999 miles	466	.7	178	.2	369	4.3
2,000 miles or more	—	—	—	—	—	—
Rail	4 190	100.0	37 956	100.0	22 347	100.0
Less than 50 miles	151	3.6	S	S	68	.3
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	235	5.6	3 651	9.6	1 056	4.7
250 to 499 miles	995	23.8	10 333	27.2	6 087	27.2
500 to 749 miles	473	11.3	2 085	5.5	1 958	8.8
750 to 999 miles	1 028	24.5	6 216	16.4	7 996	35.8
1,000 to 1,499 miles	166	4.0	1 080	2.8	1 661	7.4
1,500 to 1,999 miles	448	10.7	1 044	2.8	2 321	10.4
2,000 miles or more	—	—	—	—	—	—
Water	S	S	S	S	S	S
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	S	S	S	S	S	S
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—
Shallow draft	S	S	S	S	S	S
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—

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	S	S	S	S	S	S
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	S	S	S	S	S	S
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—
Air (includes truck and air)	1 993	100.0	55	100.0	65	100.0
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	S	S	1	.9	—	.5
100 to 249 miles	136	6.8	5	8.4	3	4.3
250 to 499 miles	799	40.1	S	S	S	S
500 to 749 miles	328	16.4	8	14.6	8	11.7
750 to 999 miles	317	15.9	7	12.6	8	12.1
1,000 to 1,499 miles	123	6.2	4	7.2	6	9.9
1,500 to 1,999 miles	257	12.9	7	12.5	17	26.7
2,000 miles or more	5	.2	S	S	S	S
Pipeline⁴	S	S	S	S	S	S
Less than 50 miles	—	—	—	—	S	S
50 to 99 miles	—	—	—	—	S	S
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	—	—	—	—	S	S
500 to 749 miles	—	—	—	—	S	S
750 to 999 miles	—	—	—	—	S	S
1,000 to 1,499 miles	—	—	—	—	S	S
1,500 to 1,999 miles	—	—	—	—	S	S
2,000 miles or more	—	—	—	—	S	S
Multiple modes	29 984	100.0	2 435	100.0	2 928	100.0
Less than 50 miles	1 668	5.6	88	3.6	S	S
50 to 99 miles	1 528	5.1	66	2.7	7	.2
100 to 249 miles	2 568	8.6	95	3.9	22	.7
250 to 499 miles	5 146	17.2	247	10.1	114	3.9
500 to 749 miles	4 887	16.3	664	27.3	561	19.1
750 to 999 miles	7 185	24.0	575	23.6	621	21.2
1,000 to 1,499 miles	2 687	9.0	137	5.6	214	7.3
1,500 to 1,999 miles	3 946	13.2	532	21.9	1 232	42.1
2,000 miles or more	S	S	S	S	S	S
Parcel, U.S. Postal Service or courier	22 439	100.0	749	100.0	607	100.0
Less than 50 miles	1 645	7.3	47	6.2	1	.2
50 to 99 miles	1 491	6.6	55	7.3	6	.9
100 to 249 miles	2 501	11.1	90	12.0	21	3.4
250 to 499 miles	3 606	16.1	131	17.5	59	9.7
500 to 749 miles	3 338	14.9	112	14.9	91	14.9
750 to 999 miles	5 536	24.7	179	23.9	185	30.6
1,000 to 1,499 miles	1 971	8.8	66	8.9	97	16.1
1,500 to 1,999 miles	2 322	10.3	68	9.1	139	22.9
2,000 miles or more	30	.1	2	.3	8	1.3
Truck and rail	S	S	1 673	100.0	2 279	100.0
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	S	S	S	S	S	S
500 to 749 miles	S	S	550	32.9	467	20.5
750 to 999 miles	S	S	395	23.6	434	19.1
1,000 to 1,499 miles	S	S	S	S	S	S
1,500 to 1,999 miles	S	S	464	27.7	1 093	48.0
2,000 miles or more	S	S	S	S	S	S
Truck and water	28	100.0	S	S	S	S
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	S	S	S	S	S	S
750 to 999 miles	—	—	—	—	—	—
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	S	S	S	S	S	S
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	—	—	—	—	—	—
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	S	S	S	S	S	S
Other multiple modes	S	S	S	S	S	S
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	S	S	S	S	S	S
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—
Other and unknown modes	7 693	100.0	8 933	100.0	1 641	100.0
Less than 50 miles	2 031	26.4	S	S	S	S
50 to 99 miles	408	5.3	2 426	27.2	209	12.7
100 to 249 miles	793	10.3	1 196	13.4	S	S
250 to 499 miles	S	S	300	3.4	135	8.2
500 to 749 miles	660	8.6	S	S	S	S
750 to 999 miles	S	S	225	2.5	230	14.0
1,000 to 1,499 miles	381	4.9	S	S	S	S
1,500 to 1,999 miles	451	5.9	65	.7	134	8.1
2,000 miles or more	S	S	S	S	S	S

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

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

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

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

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

⁴Estimates for pipeline exclude shipments of crude petroleum.

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

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

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

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

Mode of transportation and shipment weight	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
Total	217 451	100.0	229 502	100.0	70 753	100.0	642
Less than 50 lb	22 028	10.1	631	.3	377	.5	741
50 to 99 lb	5 406	2.5	327	.1	110	.2	321
100 to 499 lb	17 353	8.0	1 807	.8	610	.9	336
500 to 749 lb	5 523	2.5	904	.4	288	.4	317
750 to 999 lb	3 491	1.6	781	.3	230	.3	292
1,000 to 9,999 lb	53 841	24.8	16 427	7.2	5 367	7.6	305
10,000 to 49,999 lb	97 465	44.8	121 719	53.0	27 902	39.4	228
50,000 to 99,999 lb	5 589	2.6	23 488	10.2	3 461	4.9	147
100,000 lb or more	6 756	3.1	63 417	27.6	32 409	45.8	553
Single modes	179 774	100.0	218 134	100.0	66 184	100.0	203
Less than 50 lb	5 641	3.1	214	.1	31	—	141
50 to 99 lb	2 790	1.6	208	.1	34	—	160
100 to 499 lb	13 052	7.3	1 516	.7	431	.7	266
500 to 749 lb	4 885	2.7	860	.4	263	.4	303
750 to 999 lb	3 341	1.9	756	.3	221	.3	289
1,000 to 9,999 lb	45 241	25.2	15 381	7.1	4 402	6.7	277
10,000 to 49,999 lb	93 001	51.7	117 012	53.6	25 905	39.1	223
50,000 to 99,999 lb	5 208	2.9	22 653	10.4	3 189	4.8	140
100,000 lb or more	6 614	3.7	59 534	27.3	31 707	47.9	562
Truck²	172 120	100.0	169 843	100.0	34 949	100.0	183
Less than 50 lb	4 981	2.9	209	.1	25	—	106
50 to 99 lb	2 682	1.6	206	.1	32	—	149
100 to 499 lb	12 635	7.3	1 500	.9	412	1.2	255
500 to 749 lb	4 687	2.7	854	.5	255	.7	296
750 to 999 lb	3 286	1.9	755	.4	218	.6	286
1,000 to 9,999 lb	44 819	26.0	15 340	9.0	4 348	12.4	274
10,000 to 49,999 lb	92 017	53.5	116 784	68.8	25 631	73.3	221
50,000 to 99,999 lb	4 962	2.9	22 334	13.1	3 012	8.6	135
100,000 lb or more	2 051	1.2	S	S	1 015	2.9	S
For-hire truck	102 267	100.0	89 144	100.0	26 143	100.0	476
Less than 50 lb	949	.9	22	—	11	—	403
50 to 99 lb	586	.6	31	—	20	—	624
100 to 499 lb	6 275	6.1	468	.5	301	1.2	644
500 to 749 lb	2 792	2.7	332	.4	198	.8	597
750 to 999 lb	2 057	2.0	274	.3	172	.7	623
1,000 to 9,999 lb	27 235	26.6	6 878	7.7	3 350	12.8	506
10,000 to 49,999 lb	58 921	57.6	68 706	77.1	19 661	75.2	298
50,000 to 99,999 lb	2 502	2.4	10 149	11.4	1 640	6.3	151
100,000 lb or more	949	.9	2 284	2.6	790	3.0	385
Private truck	69 085	100.0	80 346	100.0	8 671	100.0	86
Less than 50 lb	4 028	5.8	186	.2	14	.2	75
50 to 99 lb	2 096	3.0	175	.2	12	.1	69
100 to 499 lb	6 329	9.2	1 028	1.3	111	1.3	97
500 to 749 lb	1 895	2.7	522	.7	57	.7	107
750 to 999 lb	1 229	1.8	481	.6	47	.5	97
1,000 to 9,999 lb	17 192	24.9	8 408	10.5	979	11.3	107
10,000 to 49,999 lb	32 772	47.4	47 846	59.5	5 859	67.6	123
50,000 to 99,999 lb	2 442	3.5	12 123	15.1	S	S	121
100,000 lb or more	1 102	1.6	S	S	225	2.6	S
Rail	4 190	100.0	37 956	100.0	22 347	100.0	787
Less than 50 lb	S	S	S	S	S	S	602
50 to 99 lb	S	S	S	S	S	S	1 312
100 to 499 lb	S	S	S	S	S	S	1 194
500 to 749 lb	S	S	S	S	S	S	1 405
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	S	S	28	—	38	.2	1 373
10,000 to 49,999 lb	761	18.2	208	.5	251	1.1	1 243
50,000 to 99,999 lb	246	5.9	318	.8	177	.8	536
100,000 lb or more	3 098	73.9	37 394	98.5	21 871	97.9	643
Water	S	S	S	S	S	S	1 227
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	S	S	S	S	S	S	1
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	3 178
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	S	S	S	S	S	S	1 360
Shallow draft	S	S	S	S	S	S	1 455
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	1 455

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	\$	\$	\$	\$	\$	\$	1
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	\$	\$	\$	\$	\$	\$	1
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	—	—	—	—	—	—	—
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—
Deep draft	\$	\$	\$	\$	\$	\$	992
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	\$	\$	\$	\$	\$	\$	3 178
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	\$	\$	\$	\$	\$	\$	150
Air (includes truck and air)	1 993	100.0	55	100.0	65	100.0	1 243
Less than 50 lb	659	33.0	5	9.2	6	9.4	1 244
50 to 99 lb	106	5.3	2	3.2	2	3.4	1 244
100 to 499 lb	397	19.9	12	21.6	15	22.5	1 226
500 to 749 lb	186	9.3	2	3.5	2	3.5	1 199
750 to 999 lb	56	2.8	2	3.0	2	3.0	1 368
1,000 to 9,999 lb	371	18.6	14	25.0	17	26.6	1 335
10,000 to 49,999 lb	\$	\$	\$	\$	\$	\$	1 147
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—
Pipeline³	\$	\$	\$	\$	\$	\$	\$
Less than 50 lb	\$	\$	\$	\$	\$	\$	\$
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	—	—	—	—	—	—	—
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	—	—	—	—	—	—	—
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—
Multiple modes	29 984	100.0	2 435	100.0	2 928	100.0	911
Less than 50 lb	15 736	52.5	390	16.0	342	11.7	918
50 to 99 lb	2 448	8.2	103	4.2	74	2.5	690
100 to 499 lb	3 496	11.7	218	9.0	163	5.6	751
500 to 749 lb	\$	\$	24	1.0	22	.8	926
750 to 999 lb	117	.4	13	.5	7	.2	553
1,000 to 9,999 lb	\$	\$	\$	\$	\$	\$	1 482
10,000 to 49,999 lb	1 603	5.3	1 094	44.9	1 481	50.6	1 423
50,000 to 99,999 lb	\$	\$	\$	\$	\$	\$	83
100,000 lb or more	\$	\$	\$	\$	\$	\$	1 390
Parcel, U.S. Postal Service or courier	22 439	100.0	749	100.0	607	100.0	909
Less than 50 lb	15 735	70.1	390	52.1	342	56.4	918
50 to 99 lb	2 448	10.9	103	13.7	74	12.1	690
100 to 499 lb	3 480	15.5	217	28.9	159	26.2	742
500 to 749 lb	\$	\$	24	3.2	22	3.6	926
750 to 999 lb	114	.5	12	1.7	7	1.1	540
1,000 to 9,999 lb	\$	\$	\$	\$	\$	\$	1 164
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—
Truck and rail	\$	\$	1 673	100.0	2 279	100.0	1 408
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	—	—	—	—	—	—	—
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	\$	\$	\$	\$	\$	\$	1 208
1,000 to 9,999 lb	\$	\$	\$	\$	\$	\$	1 407
10,000 to 49,999 lb	\$	\$	1 089	65.1	1 476	64.8	1 419
50,000 to 99,999 lb	\$	\$	\$	\$	\$	\$	83
100,000 lb or more	\$	\$	\$	\$	\$	\$	1 391
Truck and water	28	100.0	\$	\$	\$	\$	4 645
Less than 50 lb	\$	\$	\$	\$	\$	\$	3 319
50 to 99 lb	\$	\$	\$	\$	\$	\$	4 743
100 to 499 lb	\$	\$	\$	\$	\$	\$	4 791
500 to 749 lb	\$	\$	\$	\$	\$	\$	\$
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	\$	\$	\$	\$	\$	\$	9 304
10,000 to 49,999 lb	\$	\$	\$	\$	\$	\$	\$
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—

See footnotes at end of table.

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

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

Mode of transportation and shipment weight	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
Multiple modes—Con.							
Rail and water	S	S	S	S	S	S	4 733
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	—	—	—	—	—	—	—
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	—	—	—	—	—	—	—
10,000 to 49,999 lb	S	S	S	S	S	S	4 733
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	1 256
Less than 50 lb	S	S	S	S	S	S	10
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	S	S	S	S	S	S	1 323
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	1 356
Other and unknown modes	7 693	100.0	8 933	100.0	1 641	100.0	S
Less than 50 lb	651	8.5	27	.3	S	S	S
50 to 99 lb	168	2.2	17	.2	S	S	S
100 to 499 lb	804	10.5	73	.8	S	S	S
500 to 749 lb	90	1.2	19	.2	S	S	S
750 to 999 lb	32	.4	S	S	2	.1	S
1,000 to 9,999 lb	2 707	35.2	579	6.5	276	16.8	514
10,000 to 49,999 lb	2 861	37.2	S	S	516	31.4	S
50,000 to 99,999 lb	S	S	830	9.3	S	S	385
100,000 lb or more	S	S	3 764	42.1	S	S	232

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

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

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

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

³Estimates for pipeline exclude shipments of crude petroleum.

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

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

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

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

SCTG code	Commodity description	Value		Tons		Ton-miles ¹		Average miles per shipment
		2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
	Total²	217 451	100.0	229 502	100.0	70 753	100.0	642
01	Live animals and live fish	S	S	S	S	S	S	871
02	Cereal grains	2 646	1.2	27 019	11.8	11 670	16.5	S
03	Other agricultural products	S	S	S	S	S	S	550
04	Animal feed and products of animal origin, n.e.c.	S	S	S	S	S	S	S
05	Meat, fish, seafood, and their preparations	5 548	2.6	1 769	.8	890	1.3	276
06	Milled grain products and preparations, and bakery products	2 021	.9	1 246	.5	S	S	659
07	Other prepared foodstuffs and fats and oils	25 716	11.8	19 924	8.7	7 253	10.3	454
08	Alcoholic beverages	2 423	1.1	2 286	1.0	243	.3	35
09	Tobacco products	S	S	S	S	S	S	92
10	Monumental or building stone	S	S	S	S	S	S	284
11	Natural sands	50	-	3 839	1.7	1 175	1.7	S
12	Gravel and crushed stone	325	.1	57 138	24.9	10 687	15.1	S
13	Nonmetallic minerals n.e.c.	S	S	S	S	S	S	256
14	Metallic ores and concentrates	S	S	S	S	S	S	426
15	Coal	-	-	-	-	-	-	-
17	Gasoline and aviation turbine fuel	1 314	.6	5 330	2.3	S	S	126
18	Fuel oils	1 029	.5	5 722	2.5	2 752	3.9	S
19	Coal and petroleum products, n.e.c.	S	S	846	.4	S	S	S
20	Basic chemicals	1 044	.5	1 826	.8	431	.6	557
21	Pharmaceutical products	1 254	.6	S	S	S	S	721
22	Fertilizers	S	S	S	S	S	S	215
23	Chemical products and preparations, n.e.c.	6 543	3.0	4 189	1.8	2 665	3.8	178
24	Plastics and rubber	8 227	3.8	3 243	1.4	1 167	1.6	335
25	Logs and other wood in the rough	S	S	S	S	S	S	130
26	Wood products	6 206	2.9	8 376	3.6	2 393	3.4	390
27	Pulp, newsprint, paper, and paperboard	5 415	2.5	4 407	1.9	2 811	4.0	448
28	Paper or paperboard articles	8 583	3.9	5 344	2.3	1 867	2.6	416
29	Printed products	3 991	1.8	1 725	.8	1 313	1.9	543
30	Textiles, leather, and articles of textiles or leather	7 305	3.4	339	.1	274	.4	959
31	Nonmetallic mineral products	3 831	1.8	S	S	1 294	1.8	510
32	Base metal in primary or semifinished forms and in finished basic shapes	6 177	2.8	5 126	2.2	1 911	2.7	270
33	Articles of base metal	8 390	3.9	2 059	.9	886	1.3	274
34	Machinery	17 255	7.9	2 424	1.1	1 648	2.3	311
35	Electronic and other electrical equipment and components and office equipment	12 676	5.8	1 284	.6	923	1.3	444
36	Motorized and other vehicles (including parts)	23 593	10.8	6 366	2.8	1 916	2.7	325
37	Transportation equipment, n.e.c.	499	.2	10	-	S	S	765
38	Precision instruments and apparatus	2 880	1.3	S	S	S	S	774
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	3 799	1.7	837	.4	469	.7	387
40	Miscellaneous manufactured products	11 804	5.4	2 023	.9	1 300	1.8	785
41	Waste and scrap	S	S	S	S	233	.3	156
43	Mixed freight	29 207	13.4	7 962	3.5	1 198	1.7	859
--	Commodity unknown	521	.2	266	.1	54	-	252

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

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

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

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

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

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

SCTG code	Commodity description	Value (percent)		Tons (percent)		Ton-miles ¹ (percent)	
		2002	1997	2002	1997	2002	1997
	Total²	100.0	100.0	100.0	100.0	100.0	100.0
01	Live animals and live fish	S	—	S	S	S	—
02	Cereal grains	1.2	.6	11.8	3.5	16.5	8.0
03	Other agricultural products	S	.9	S	1.2	S	1.3
04	Animal feed and products of animal origin, n.e.c.	S	.8	S	2.3	S	1.9
05	Meat, fish, seafood, and their preparations	2.6	3.0	.8	.9	1.3	2.2
06	Milled grain products and preparations, and bakery products	.9	1.4	.5	1.0	S	3.5
07	Other prepared foodstuffs and fats and oils	11.8	11.7	8.7	6.5	10.3	11.4
08	Alcoholic beverages	1.1	.7	1.0	.6	.3	.5
09	Tobacco products	S	.3	S	—	S	—
10	Monumental or building stone	S	S	S	S	S	—
11	Natural sands	—	—	1.7	3.7	1.7	1.7
12	Gravel and crushed stone	.1	.1	24.9	30.5	15.1	5.7
13	Nonmetallic minerals n.e.c.	S	.1	S	2.0	S	S
14	Metallic ores and concentrates	S	S	S	S	S	S
15	Coal	—	S	—	S	—	S
17	Gasoline and aviation turbine fuel	.6	2.4	2.3	S	S	2.7
18	Fuel oils	.5	1.2	2.5	4.0	3.9	1.3
19	Coal and petroleum products, n.e.c.	S	.4	.4	1.8	S	.9
20	Basic chemicals	.5	.5	.8	.6	.6	.8
21	Pharmaceutical products	.6	1.2	S	—	S	—
22	Fertilizers	S	.3	S	1.2	S	.2
23	Chemical products and preparations, n.e.c.	3.0	2.8	1.8	.8	3.8	2.2
24	Plastics and rubber	3.8	4.9	1.4	1.0	1.6	2.5
25	Logs and other wood in the rough	S	—	S	—	S	—
26	Wood products	2.9	2.1	3.6	3.2	3.4	3.7
27	Pulp, newsprint, paper, and paperboard	2.5	4.2	1.9	4.9	4.0	17.2
28	Paper or paperboard articles	3.9	3.2	2.3	1.5	2.6	3.1
29	Printed products	1.8	2.9	.8	.6	1.9	1.8
30	Textiles, leather, and articles of textiles or leather	3.4	1.9	.1	.1	.4	.4
31	Nonmetallic mineral products	1.8	1.5	S	9.3	1.8	5.1
32	Base metal in primary or semifinished forms and in finished basic shapes	2.8	3.9	2.2	2.6	2.7	4.0
33	Articles of base metal	3.9	4.2	.9	.9	1.3	2.2
34	Machinery	7.9	11.9	1.1	1.0	2.3	3.2
35	Electronic and other electrical equipment and components and office equipment	5.8	7.2	.6	.5	1.3	1.5
36	Motorized and other vehicles (including parts)	10.8	9.6	2.8	1.4	2.7	3.2
37	Transportation equipment, n.e.c.	.2	.6	—	—	S	.1
38	Precision instruments and apparatus	1.3	2.1	S	—	S	.1
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	1.7	1.4	.4	.3	.7	1.0
40	Miscellaneous manufactured products	5.4	6.0	.9	.9	1.8	2.7
41	Waste and scrap	S	.6	S	1.8	.3	1.6
43	Mixed freight	13.4	2.6	3.5	1.0	1.7	.6
--	Commodity unknown	.2	.3	.1	S	—	.3

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

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

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

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

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

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

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
ALL COMMODITIES							
Total²	217 451	100.0	229 502	100.0	70 753	100.0	642
Single modes	179 774	82.7	218 134	95.0	66 184	93.5	203
Truck ³	172 120	79.2	169 843	74.0	34 949	49.4	183
For-hire truck	102 267	47.0	89 144	38.8	26 143	36.9	476
Private truck	69 085	31.8	80 346	35.0	8 671	12.3	86
Rail	4 190	1.9	37 956	16.5	22 347	31.6	787
Water	S	S	S	S	S	S	1 227
Shallow draft	S	S	S	S	S	S	1 455
Great Lakes	S	S	S	S	S	S	1
Deep draft	S	S	S	S	S	S	992
Air (includes truck and air)	1 993	.9	55	—	65	—	1 243
Pipeline ⁴	S	S	S	S	S	S	S
Multiple modes	29 984	13.8	2 435	1.1	2 928	4.1	911
Parcel, U.S. Postal Service or courier	22 439	10.3	749	.3	607	.9	909
Truck and rail	S	S	1 673	.7	2 279	3.2	1 408
Truck and water	28	—	S	S	S	S	4 645
Rail and water	S	S	S	S	S	S	4 733
Other multiple modes	S	S	S	S	S	S	1 256
Other and unknown modes	7 693	3.5	8 933	3.9	1 641	2.3	S
SCTG 01, LIVE ANIMALS AND LIVE FISH							
Total	S	S	S	S	S	S	871
Single modes	S	S	S	S	S	S	871
Truck ³	—	—	—	—	—	—	—
For-hire truck	—	—	—	—	—	—	—
Private truck	—	—	—	—	—	—	—
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	871
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	—	—	—	—	—	—	—
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—
SCTG 02, CEREAL GRAINS							
Total	2 646	100.0	27 019	100.0	11 670	100.0	S
Single modes	2 646	100.0	27 019	100.0	11 670	100.0	S
Truck ³	S	S	S	S	S	S	S
For-hire truck	S	S	S	S	S	S	55
Private truck	S	S	S	S	S	S	S
Rail	S	S	S	S	S	S	1 024
Water	821	31.0	S	S	S	S	1 289
Shallow draft	S	S	S	S	S	S	1 429
Great Lakes	—	—	—	—	—	—	—
Deep draft	S	S	S	S	S	S	174
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	—	—	—	—	—	—	—
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—

See footnotes at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
SCTG 03, OTHER AGRICULTURAL PRODUCTS							
Total	\$	\$	\$	\$	\$	\$	550
Single modes	\$	\$	\$	\$	\$	\$	160
Truck ³	\$	\$	\$	\$	\$	\$	154
For-hire truck	\$	\$	\$	\$	\$	\$	284
Private truck	\$	\$	\$	\$	\$	\$	83
Rail	\$	\$	\$	\$	\$	\$	2 276
Water	\$	\$	\$	\$	\$	\$	1 450
Shallow draft	\$	\$	\$	\$	\$	\$	1 485
Great Lakes	\$	\$	\$	\$	\$	\$	—
Deep draft	\$	\$	\$	\$	\$	\$	8
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	\$	\$	\$
Multiple modes	\$	\$	\$	\$	\$	\$	1 040
Parcel, U.S. Postal Service or courier	\$	\$	\$	\$	\$	\$	1 040
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	\$	\$	\$	\$	\$	\$	13
SCTG 04, ANIMAL FEED AND PRODUCTS OF ANIMAL ORIGIN, N.E.C.							
Total	\$	\$	\$	\$	\$	\$	\$
Single modes	\$	\$	\$	\$	\$	\$	\$
Truck ³	\$	\$	\$	\$	\$	\$	\$
For-hire truck	\$	\$	\$	\$	\$	\$	370
Private truck	\$	\$	\$	\$	\$	\$	43
Rail	1	—	14	.3	10	1.2	663
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	\$	\$	\$
Multiple modes	\$	\$	\$	\$	\$	\$	702
Parcel, U.S. Postal Service or courier	\$	\$	\$	\$	\$	\$	702
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	\$	\$	\$	\$	\$	\$	126
SCTG 05, MEAT, FISH, SEAFOOD, AND THEIR PREPARATIONS							
Total	5 548	100.0	1 769	100.0	890	100.0	276
Single modes	5 505	99.2	1 763	99.6	887	99.7	\$
Truck ³	5 416	97.6	1 704	96.3	839	94.2	\$
For-hire truck	2 629	47.4	836	47.2	658	73.9	661
Private truck	2 787	50.2	869	49.1	180	20.3	\$
Rail	\$	\$	\$	\$	\$	\$	946
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	\$	\$	\$	\$	\$	\$	1 987
Pipeline ⁴	—	—	—	—	\$	\$	\$
Multiple modes	\$	\$	\$	\$	\$	\$	909
Parcel, U.S. Postal Service or courier	\$	\$	\$	\$	\$	\$	909
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 06, MILLED GRAIN PRODUCTS AND PREPARATIONS, AND BAKERY PRODUCTS							
Total	2 021	100.0	1 246	100.0	S	S	659
Single modes	1 979	97.9	1 241	99.6	S	S	123
Truck ³	1 971	97.5	1 182	94.9	S	S	122
For-hire truck	1 181	58.4	890	71.4	S	S	500
Private truck	S	S	292	23.4	39	6.8	81
Rail	S	S	59	4.7	59	10.4	1 003
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	41	2.0	4	.4	S	S	1 224
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	1 223
Truck and rail	S	S	S	S	S	S	1 961
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	105
SCTG 07, OTHER PREPARED FOODSTUFFS AND FATS AND OILS							
Total	25 716	100.0	19 924	100.0	7 253	100.0	454
Single modes	25 342	98.5	19 826	99.5	7 160	98.7	S
Truck ³	25 333	98.5	19 821	99.5	7 155	98.6	S
For-hire truck	14 382	55.9	10 135	50.9	4 781	65.9	521
Private truck	10 622	41.3	9 556	48.0	2 271	31.3	80
Rail	S	S	S	S	S	S	S
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 612
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	290	1.1	49	.2	70	1.0	1 158
Parcel, U.S. Postal Service or courier	S	S	10	—	S	S	1 158
Truck and rail	S	S	S	S	S	S	1 904
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	84	.3	50	.2	23	.3	327
SCTG 08, ALCOHOLIC BEVERAGES							
Total	2 423	100.0	2 286	100.0	243	100.0	35
Single modes	2 380	98.2	2 248	98.3	243	99.7	35
Truck ³	2 380	98.2	2 248	98.3	243	99.7	35
For-hire truck	S	S	S	S	S	S	S
Private truck	2 110	87.1	1 968	86.1	223	91.6	34
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	S
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	3
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	67
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	26

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	\$	\$	\$	\$	\$	\$	92
Single modes	\$	\$	\$	\$	\$	\$	89
Truck ³	\$	\$	\$	\$	\$	\$	89
For-hire truck	\$	\$	\$	\$	\$	\$	89
Private truck	\$	\$	\$	\$	\$	\$	89
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	\$	\$	\$
Multiple modes	\$	\$	\$	\$	\$	\$	238
Parcel, U.S. Postal Service or courier	\$	\$	\$	\$	\$	\$	238
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—
SCTG 10, MONUMENTAL OR BUILDING STONE							
Total	\$	\$	\$	\$	\$	\$	284
Single modes	\$	\$	\$	\$	\$	\$	284
Truck ³	\$	\$	\$	\$	\$	\$	284
For-hire truck	7	21.7	\$	\$	\$	\$	630
Private truck	\$	\$	\$	\$	\$	\$	128
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	\$	\$	\$
Multiple modes	\$	\$	\$	\$	\$	\$	109
Parcel, U.S. Postal Service or courier	\$	\$	\$	\$	\$	\$	109
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	\$	\$	\$	\$	\$	\$	66
SCTG 11, NATURAL SANDS							
Total	50	100.0	3 839	100.0	1 175	100.0	\$
Single modes	49	97.2	3 717	96.8	1 174	99.9	\$
Truck ³	19	37.4	2 426	63.2	81	6.9	32
For-hire truck	\$	\$	1 196	31.1	31	2.6	\$
Private truck	10	20.7	\$	\$	50	4.3	36
Rail	30	59.8	1 292	33.6	1 093	93.0	839
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	\$	\$	\$
Multiple modes	—	—	—	—	—	—	—
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	\$	\$	122	3.2	1	—	9

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	325	100.0	57 138	100.0	10 687	100.0	S
Single modes	306	94.3	53 403	93.5	10 118	94.7	S
Truck ³	186	57.3	36 893	64.6	994	9.3	31
For-hire truck	62	19.2	12 552	22.0	566	5.3	S
Private truck	124	38.1	24 341	42.6	428	4.0	22
Rail	120	37.0	16 509	28.9	9 124	85.4	544
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	19	5.7	3 735	6.5	S	S	224
SCTG 13, NONMETALLIC MINERALS N.E.C.							
Total	S	S	S	S	S	S	256
Single modes	S	S	S	S	S	S	181
Truck ³	S	S	S	S	S	S	181
For-hire truck	S	S	S	S	S	S	286
Private truck	S	S	S	S	S	S	S
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	670
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	670
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	1 065
SCTG 14, METALLIC ORES AND CONCENTRATES							
Total	S	S	S	S	S	S	426
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	S	S	S	S	S	S	426
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	426
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—

See footnotes at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
SCTG 15, COAL							
Total	-	-	-	-	-	-	-
Single modes	-	-	-	-	-	-	-
Truck ³	-	-	-	-	-	-	-
For-hire truck	-	-	-	-	-	-	-
Private truck	-	-	-	-	-	-	-
Rail	-	-	-	-	-	-	-
Water	-	-	-	-	-	-	-
Shallow draft	-	-	-	-	-	-	-
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	-	-	-	-	-	-	-
Pipeline ⁴	-	-	-	-	\$	\$	\$
Multiple modes	-	-	-	-	-	-	-
Parcel, U.S. Postal Service or courier	-	-	-	-	-	-	-
Truck and rail	-	-	-	-	-	-	-
Truck and water	-	-	-	-	-	-	-
Rail and water	-	-	-	-	-	-	-
Other multiple modes	-	-	-	-	-	-	-
Other and unknown modes	-	-	-	-	-	-	-
SCTG 17, GASOLINE AND AVIATION TURBINE FUEL							
Total	1 314	100.0	5 330	100.0	\$	\$	126
Single modes	1 305	99.4	5 275	99.0	\$	\$	120
Truck ³	1 216	92.6	4 598	86.3	\$	\$	101
For-hire truck	547	41.6	2 096	39.3	321	28.0	147
Private truck	\$	\$	\$	\$	\$	\$	\$
Rail	\$	\$	\$	\$	\$	\$	689
Water	-	-	-	-	-	-	-
Shallow draft	-	-	-	-	-	-	-
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	-	-	-	-	-	-	-
Pipeline ⁴	-	-	-	-	\$	\$	\$
Multiple modes	\$	\$	\$	\$	\$	\$	2 404
Parcel, U.S. Postal Service or courier	-	-	-	-	-	-	-
Truck and rail	\$	\$	\$	\$	\$	\$	2 404
Truck and water	-	-	-	-	-	-	-
Rail and water	-	-	-	-	-	-	-
Other multiple modes	-	-	-	-	-	-	-
Other and unknown modes	-	-	-	-	-	-	-
SCTG 18, FUEL OILS							
Total	1 029	100.0	5 722	100.0	2 752	100.0	\$
Single modes	1 029	100.0	5 722	100.0	2 752	100.0	\$
Truck ³	781	75.9	3 607	63.0	\$	\$	\$
For-hire truck	314	30.5	1 586	27.7	422	15.3	242
Private truck	467	45.4	2 022	35.3	\$	\$	\$
Rail	\$	\$	\$	\$	\$	\$	991
Water	-	-	-	-	-	-	-
Shallow draft	-	-	-	-	-	-	-
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	-	-	-	-	-	-	-
Pipeline ⁴	-	-	-	-	\$	\$	\$
Multiple modes	-	-	-	-	-	-	-
Parcel, U.S. Postal Service or courier	-	-	-	-	-	-	-
Truck and rail	-	-	-	-	-	-	-
Truck and water	-	-	-	-	-	-	-
Rail and water	-	-	-	-	-	-	-
Other multiple modes	-	-	-	-	-	-	-
Other and unknown modes	-	-	-	-	-	-	-

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	\$	\$	846	100.0	\$	\$	\$
Single modes	\$	\$	841	99.4	\$	\$	\$
Truck ³	\$	\$	486	57.5	\$	\$	\$
For-hire truck	\$	\$	435	51.5	109	17.7	746
Private truck	59	11.9	51	6.0	5	.8	5
Rail	\$	\$	\$	\$	\$	\$	1 416
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	\$	\$	\$	\$	\$	\$	679
Pipeline ⁴	—	—	—	—	\$	\$	\$
Multiple modes	\$	\$	\$	\$	\$	\$	847
Parcel, U.S. Postal Service or courier	\$	\$	\$	\$	\$	\$	846
Truck and rail	\$	\$	\$	\$	\$	\$	1 594
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	\$	\$	\$	\$	\$	\$	\$
SCTG 20, BASIC CHEMICALS							
Total	1 044	100.0	1 826	100.0	431	100.0	557
Single modes	993	95.1	1 824	99.9	429	99.7	647
Truck ³	814	77.9	1 283	70.2	168	39.1	648
For-hire truck	321	30.7	588	32.2	91	21.0	286
Private truck	493	47.2	\$	\$	\$	\$	676
Rail	\$	\$	\$	\$	\$	\$	477
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	\$	\$	\$	\$	\$	\$	1 366
Pipeline ⁴	—	—	—	—	\$	\$	\$
Multiple modes	\$	\$	\$	\$	\$	\$	\$
Parcel, U.S. Postal Service or courier	\$	\$	\$	\$	\$	\$	\$
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	\$	\$	\$	\$	\$	\$	404
SCTG 21, PHARMACEUTICAL PRODUCTS							
Total	1 254	100.0	\$	\$	\$	\$	721
Single modes	\$	\$	\$	\$	\$	\$	\$
Truck ³	\$	\$	\$	\$	\$	\$	\$
For-hire truck	\$	\$	\$	\$	\$	\$	499
Private truck	112	9.0	\$	\$	\$	\$	25
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	\$	\$	\$	\$	\$	\$	1 625
Pipeline ⁴	—	—	—	—	\$	\$	\$
Multiple modes	605	48.2	2	28.8	1	33.5	811
Parcel, U.S. Postal Service or courier	605	48.2	2	28.8	1	33.5	811
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	\$	\$	\$	\$	\$	\$	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 22, FERTILIZERS							
Total	S	S	S	S	S	S	215
Single modes	S	S	S	S	S	S	215
Truck ³	S	S	S	S	S	S	215
For-hire truck	S	S	S	S	S	S	291
Private truck	S	S	S	S	S	S	158
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 23, CHEMICAL PRODUCTS AND PREPARATIONS, N.E.C.							
Total	6 543	100.0	4 189	100.0	2 665	100.0	178
Single modes	5 432	83.0	3 465	82.7	1 752	65.7	S
Truck ³	5 432	83.0	3 465	82.7	1 752	65.7	S
For-hire truck	4 326	66.1	3 229	77.1	1 683	63.2	451
Private truck	1 106	16.9	237	5.6	S	S	53
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	2 169
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	1 083	16.6	717	17.1	913	34.3	341
Parcel, U.S. Postal Service or courier	252	3.9	12	.3	4	.1	300
Truck and rail	830	12.7	705	16.8	909	34.1	1 334
Truck and water	S	S	S	S	S	S	4 858
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	20
SCTG 24, PLASTICS AND RUBBER							
Total	8 227	100.0	3 243	100.0	1 167	100.0	335
Single modes	7 441	90.4	3 152	97.2	1 083	92.8	207
Truck ³	7 250	88.1	2 567	79.1	837	71.7	199
For-hire truck	4 633	56.3	1 362	42.0	638	54.6	512
Private truck	2 614	31.8	1 205	37.1	S	S	78
Rail	S	S	S	S	S	S	496
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	47	.6	4	.1	S	S	976
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	664	8.1	57	1.8	60	5.2	612
Parcel, U.S. Postal Service or courier	604	7.3	36	1.1	24	2.1	610
Truck and rail	S	S	S	S	S	S	1 645
Truck and water	S	S	S	S	S	S	S
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	34	1.1	S	S	S

See footnotes at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
SCTG 25, LOGS AND OTHER WOOD IN THE ROUGH							
Total	\$	\$	\$	\$	\$	\$	130
Single modes	\$	\$	\$	\$	\$	\$	40
Truck ³	\$	\$	\$	\$	\$	\$	40
For-hire truck	\$	\$	\$	\$	\$	\$	124
Private truck	\$	\$	\$	\$	\$	\$	39
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	\$	\$	\$
Multiple modes	\$	\$	\$	\$	\$	\$	406
Parcel, U.S. Postal Service or courier	\$	\$	\$	\$	\$	\$	406
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—
SCTG 26, WOOD PRODUCTS							
Total	6 206	100.0	8 376	100.0	2 393	100.0	390
Single modes	6 075	97.9	7 999	95.5	2 381	99.5	341
Truck ³	6 039	97.3	7 863	93.9	2 268	94.7	340
For-hire truck	2 087	33.6	3 713	44.3	\$	\$	577
Private truck	3 952	63.7	4 149	49.5	873	36.5	218
Rail	36	.6	136	1.6	113	4.7	909
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	\$	\$	\$	\$	\$	\$	1 290
Pipeline ⁴	—	—	—	—	\$	\$	\$
Multiple modes	\$	\$	\$	\$	\$	\$	833
Parcel, U.S. Postal Service or courier	\$	\$	\$	\$	\$	\$	833
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	\$	\$	\$	\$	8	.3	\$
SCTG 27, PULP, NEWSPRINT, PAPER, AND PAPERBOARD							
Total	5 415	100.0	4 407	100.0	2 811	100.0	448
Single modes	5 291	97.7	4 347	98.6	2 703	96.1	383
Truck ³	4 640	85.7	3 539	80.3	2 046	72.8	367
For-hire truck	3 997	73.8	3 190	72.4	2 031	72.2	652
Private truck	642	11.9	349	7.9	15	.5	32
Rail	651	12.0	808	18.3	657	23.4	927
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	\$	\$	\$	\$	\$	\$	2 503
Pipeline ⁴	—	—	—	—	\$	\$	\$
Multiple modes	93	1.7	27	.6	52	1.8	714
Parcel, U.S. Postal Service or courier	\$	\$	5	.1	\$	\$	703
Truck and rail	26	.5	22	.5	48	1.7	2 223
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	\$	\$	\$	\$	\$	\$	643

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	8 583	100.0	5 344	100.0	1 867	100.0	416
Single modes	8 192	95.4	5 226	97.8	1 701	91.1	320
Truck ³	8 104	94.4	5 207	97.4	1 692	90.6	251
For-hire truck	7 488	87.2	4 950	92.6	1 616	86.6	325
Private truck	602	7.0	247	4.6	S	S	S
Rail	S	S	S	S	S	S	989
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 258
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	328	3.8	89	1.7	153	8.2	757
Parcel, U.S. Postal Service or courier	156	1.8	21	.4	13	.7	728
Truck and rail	S	S	67	1.3	S	S	2 126
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	1 323
Other and unknown modes	S	S	29	.5	S	S	174
SCTG 29, PRINTED PRODUCTS							
Total	3 991	100.0	1 725	100.0	1 313	100.0	543
Single modes	3 429	85.9	1 439	83.4	994	75.7	253
Truck ³	3 367	84.4	1 416	82.1	944	71.9	S
For-hire truck	2 588	64.8	1 265	73.3	923	70.3	634
Private truck	779	19.5	151	8.8	S	S	S
Rail	S	S	S	S	S	S	2 271
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 394
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	472	11.8	S	S	S	S	874
Parcel, U.S. Postal Service or courier	392	9.8	16	.9	11	.8	864
Truck and rail	68	1.7	S	S	S	S	1 413
Truck and water	S	S	S	S	S	S	S
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	90	2.3	36	2.1	12	.9	S
SCTG 30, TEXTILES, LEATHER, AND ARTICLES OF TEXTILES OR LEATHER							
Total	7 305	100.0	339	100.0	274	100.0	959
Single modes	1 972	27.0	176	51.7	97	35.3	473
Truck ³	1 927	26.4	174	51.3	96	34.8	389
For-hire truck	1 466	20.1	105	31.0	86	31.4	714
Private truck	461	6.3	S	S	9	3.4	51
Rail	S	S	S	S	S	S	931
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	843
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	5 039	69.0	142	41.9	140	51.2	973
Parcel, U.S. Postal Service or courier	5 029	68.8	139	40.9	135	49.2	973
Truck and rail	10	.1	3	.9	5	2.0	1 587
Truck and water	S	S	S	S	S	S	4 779
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	3 831	100.0	S	S	1 294	100.0	510
Single modes	3 658	95.5	S	S	1 256	97.1	S
Truck ³	3 654	95.4	S	S	1 253	96.8	S
For-hire truck	3 103	81.0	S	S	1 088	84.1	S
Private truck	550	14.4	S	S	S	S	64
Rail	S	S	S	S	S	S	101
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 716
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	129	3.4	S	S	27	2.1	980
Parcel, U.S. Postal Service or courier	101	2.6	6	—	S	S	980
Truck and rail	S	S	S	S	S	S	552
Truck and water	—	—	—	—	—	—	—
Rail and water	S	S	S	S	S	S	4 733
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 32, BASE METAL IN PRIMARY OR SEMIFINISHED FORMS AND IN FINISHED BASIC SHAPES							
Total	6 177	100.0	5 126	100.0	1 911	100.0	270
Single modes	5 784	93.6	4 857	94.8	1 640	85.8	256
Truck ³	5 696	92.2	4 465	87.1	1 452	76.0	252
For-hire truck	3 843	62.2	3 155	61.6	1 279	66.9	468
Private truck	1 776	28.8	1 130	22.0	155	8.1	S
Rail	S	S	392	7.6	188	9.8	466
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 549
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	5	.1	3	.1	538
Parcel, U.S. Postal Service or courier	S	S	5	.1	3	.1	541
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	10
Other and unknown modes	S	S	S	S	S	S	S
SCTG 33, ARTICLES OF BASE METAL							
Total	8 390	100.0	2 059	100.0	886	100.0	274
Single modes	7 034	83.8	1 753	85.2	669	75.6	163
Truck ³	6 680	79.6	1 517	73.7	556	62.7	159
For-hire truck	4 038	48.1	928	45.1	425	48.0	446
Private truck	2 640	31.5	588	28.6	S	S	S
Rail	330	3.9	236	11.4	113	12.8	492
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	24	.3	—	—	S	S	741
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	980	11.7	34	1.7	S	S	533
Parcel, U.S. Postal Service or courier	956	11.4	29	1.4	22	2.5	530
Truck and rail	S	S	S	S	S	S	1 224
Truck and water	S	S	S	S	S	S	4 653
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	377	4.5	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 34, MACHINERY							
Total	17 255	100.0	2 424	100.0	1 648	100.0	311
Single modes	13 591	78.8	2 217	91.4	1 505	91.3	180
Truck ³	12 999	75.3	2 158	89.0	1 435	87.1	163
For-hire truck	8 417	48.8	1 688	69.6	1 357	82.4	681
Private truck	4 582	26.6	470	19.4	78	4.7	S
Rail	197	1.1	34	1.4	44	2.7	1 348
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 363
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	2 102	12.2	50	2.1	67	4.0	706
Parcel, U.S. Postal Service or courier	1 980	11.5	36	1.5	31	1.9	702
Truck and rail	S	S	S	S	S	S	1 206
Truck and water	S	S	S	S	S	S	9 020
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	1 563	9.1	158	6.5	77	4.7	S
SCTG 35, ELECTRONIC AND OTHER ELECTRICAL EQUIPMENT AND COMPONENTS AND OFFICE EQUIPMENT							
Total	12 676	100.0	1 284	100.0	923	100.0	444
Single modes	9 250	73.0	1 140	88.8	800	86.7	337
Truck ³	8 500	67.1	1 126	87.7	785	85.1	252
For-hire truck	7 022	55.4	992	77.3	725	78.6	497
Private truck	1 472	11.6	130	10.1	57	6.2	S
Rail	48	.4	7	.6	S	S	910
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	702	5.5	7	.5	8	.9	1 519
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	1 733	13.7	35	2.7	26	2.9	682
Parcel, U.S. Postal Service or courier	1 701	13.4	31	2.4	22	2.3	681
Truck and rail	S	S	S	S	S	S	395
Truck and water	S	S	S	S	S	S	4 601
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	1 356
Other and unknown modes	S	S	S	S	S	S	S
SCTG 36, MOTORIZED AND OTHER VEHICLES (INCLUDING PARTS)							
Total	23 593	100.0	6 366	100.0	1 916	100.0	325
Single modes	15 068	63.9	2 577	40.5	1 159	60.5	152
Truck ³	14 485	61.4	2 518	39.5	1 053	55.0	144
For-hire truck	9 939	42.1	1 498	23.5	783	40.9	585
Private truck	4 219	17.9	995	15.6	263	13.7	S
Rail	S	S	S	S	S	S	1 791
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	39	.2	2	—	3	.2	1 313
Pipeline ⁴	S	S	S	S	S	S	S
Multiple modes	S	S	S	S	S	S	807
Parcel, U.S. Postal Service or courier	S	S	40	.6	S	S	782
Truck and rail	S	S	S	S	S	S	1 380
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	1 084	4.6	S	S	S	S	S

See footnotes at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
SCTG 37, TRANSPORTATION EQUIPMENT, N.E.C.							
Total	499	100.0	10	100.0	S	S	765
Single modes	192	38.5	S	S	S	S	443
Truck ³	192	38.5	S	S	S	S	443
For-hire truck	S	S	S	S	S	S	442
Private truck	S	S	S	S	S	S	446
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	1	5.3	1	16.2	793
Parcel, U.S. Postal Service or courier	S	S	1	5.3	1	16.2	793
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	1 583
SCTG 38, PRECISION INSTRUMENTS AND APPARATUS							
Total	2 880	100.0	S	S	S	S	774
Single modes	1 819	63.2	S	S	S	S	666
Truck ³	1 658	57.6	S	S	S	S	584
For-hire truck	1 480	51.4	S	S	S	S	731
Private truck	S	S	S	S	S	S	308
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	161	5.6	2	1.0	2	1.2	1 016
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	818
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	818
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 39, FURNITURE, MATTRESSES AND MATTRESS SUPPORTS, LAMPS, LIGHTING FITTINGS, AND ILLUMINATED SIGNS							
Total	3 799	100.0	837	100.0	469	100.0	387
Single modes	3 477	91.5	801	95.7	456	97.2	508
Truck ³	3 455	90.9	794	94.8	444	94.8	489
For-hire truck	1 832	48.2	402	48.0	301	64.1	664
Private truck	1 622	42.7	392	46.8	144	30.7	389
Rail	S	S	S	S	S	S	1 333
Water	S	S	S	S	S	S	3 178
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	S	S	S	S	S	S	3 178
Air (includes truck and air)	S	S	S	S	S	S	824
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	50	1.3	5	.6	3	.7	581
Parcel, U.S. Postal Service or courier	50	1.3	5	.6	3	.7	581
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	31	3.7	S	S	S

See footnotes at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
SCTG 40, MISCELLANEOUS MANUFACTURED PRODUCTS							
Total	11 804	100.0	2 023	100.0	1 300	100.0	785
Single modes	6 390	54.1	1 802	89.1	1 147	88.2	486
Truck ³	6 227	52.8	1 799	88.9	1 142	87.8	419
For-hire truck	4 532	38.4	1 323	65.4	1 015	78.0	665
Private truck	1 696	14.4	476	23.5	S	S	146
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	162	1.4	3	.2	5	.4	1 573
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	4 484	38.0	141	7.0	117	9.0	816
Parcel, U.S. Postal Service or courier	4 320	36.6	136	6.7	108	8.3	816
Truck and rail	S	S	S	S	S	S	1 457
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	931	7.9	80	3.9	S	S	919
SCTG 41, WASTE AND SCRAP							
Total	S	S	S	S	233	100.0	156
Single modes	S	S	S	S	233	100.0	56
Truck ³	S	S	S	S	S	S	49
For-hire truck	S	S	S	S	S	S	S
Private truck	S	S	S	S	S	S	40
Rail	47	9.1	497	14.5	99	42.6	209
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	740
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	740
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—
SCTG 43, MIXED FREIGHT							
Total	29 207	100.0	7 962	100.0	1 198	100.0	859
Single modes	26 115	89.4	7 697	96.7	1 043	87.1	121
Truck ³	26 101	89.4	7 697	96.7	1 042	87.0	109
For-hire truck	8 121	27.8	1 138	14.3	265	22.1	297
Private truck	17 973	61.5	6 556	82.3	776	64.8	89
Rail	—	—	—	—	—	—	—
Water	S	S	S	S	S	S	1
Shallow draft	—	—	—	—	—	—	—
Great Lakes	S	S	S	S	S	S	1
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	12	—	S	S	S	S	1 392
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	2 678	9.2	162	2.0	151	12.6	969
Parcel, U.S. Postal Service or courier	2 525	8.6	121	1.5	93	7.8	969
Truck and rail	S	S	S	S	S	S	1 425
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	
COMMODITY UNKNOWN							
Total	521	100.0	266	100.0	54	100.0	252
Single modes	370	71.0	261	98.1	S	S	301
Truck ³	354	68.1	261	97.9	S	S	273
For-hire truck	107	20.6	47	17.8	17	31.4	642
Private truck	S	S	S	S	S	S	148
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 037
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	256
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	256
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S

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

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

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

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

⁴Estimates for pipeline exclude shipments of crude petroleum.

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

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

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

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

State of destination	Value		Tons		Ton-miles ¹	
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent
Total	217 451	100.0	229 502	100.0	70 753	100.0
NEW ENGLAND STATES						
Connecticut	1 142	.5	193	—	214	.3
Maine	567	.3	202	—	295	.4
Massachusetts	2 642	1.2	471	.2	542	.8
New Hampshire	456	.2	69	—	86	.1
Rhode Island	92	—	S	S	S	S
Vermont	124	—	S	S	S	S
MIDDLE ATLANTIC STATES						
New Jersey	4 134	1.9	756	.3	749	1.1
New York	4 797	2.2	3 224	1.4	S	S
Pennsylvania	5 913	2.7	2 815	1.2	2 364	3.3
EAST NORTH CENTRAL STATES						
Illinois	22 857	10.5	26 683	11.6	4 312	6.1
Indiana	5 019	2.3	3 611	1.6	1 463	2.1
Michigan	14 216	6.5	5 987	2.3	2 159	3.1
Ohio	7 157	3.3	8 712	3.8	5 143	7.3
Wisconsin	74 401	34.2	128 411	56.0	5 369	7.6
WEST NORTH CENTRAL STATES						
Iowa	4 152	1.9	3 339	1.5	985	1.4
Kansas	1 135	.5	1 589	.7	1 242	1.8
Minnesota	11 002	5.1	10 045	4.4	2 407	3.4
Missouri	3 244	1.5	1 740	.8	842	1.2
Nebraska	1 500	.7	S	S	S	S
North Dakota	785	.4	810	.4	531	.8
South Dakota	650	.3	355	.2	179	.3
SOUTH ATLANTIC STATES						
Delaware	126	—	20	—	21	—
District of Columbia	153	—	S	S	S	S
Florida	2 966	1.4	1 337	.6	1 851	2.6
Georgia	4 159	1.9	3 151	1.4	3 327	4.7
Maryland	1 481	.7	337	.1	300	.4
North Carolina	2 152	1.0	1 226	.5	1 290	1.8
South Carolina	1 355	.6	300	.1	295	.4
Virginia	1 903	.9	S	S	S	S
West Virginia	197	—	S	S	S	S
EAST SOUTH CENTRAL STATES						
Alabama	999	.5	831	.4	843	1.2
Kentucky	2 101	1.0	1 152	.5	556	.8
Mississippi	1 077	.5	S	S	S	S
Tennessee	3 119	1.4	1 335	.6	941	1.3
WEST SOUTH CENTRAL STATES						
Arkansas	682	.3	204	—	155	.2
Louisiana	1 688	.8	S	S	S	S
Oklahoma	572	.3	254	.1	219	.3
Texas	8 866	4.1	3 270	1.4	3 912	5.5
MOUNTAIN STATES						
Arizona	1 253	.6	249	.1	474	.7
Colorado	1 876	.9	942	.4	1 118	1.6
Idaho	311	.1	S	S	S	S
Montana	S	S	134	—	166	.2
Nevada	188	—	26	—	49	—
New Mexico	509	.2	S	S	S	S
Utah	1 232	.6	232	.1	350	.5
Wyoming	97	—	S	S	S	S
PACIFIC STATES						
Alaska	16	—	S	S	S	S
California	8 387	3.9	2 171	.9	4 735	6.7
Hawaii	S	S	S	S	S	S
Oregon	954	.4	502	.2	1 097	1.6
Washington	2 090	1.0	779	.3	1 580	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.

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

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

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	182 785	100.0	248 800	100.0	88 921	100.0
NEW ENGLAND STATES						
Connecticut	798	.4	64	—	66	—
Maine	410	.2	379	.2	486	.5
Massachusetts	1 414	.8	169	—	189	.2
New Hampshire	370	.2	181	—	215	.2
Rhode Island	121	—	S	S	S	S
Vermont	92	—	S	S	S	S
MIDDLE ATLANTIC STATES						
New Jersey	2 677	1.5	812	.3	815	.9
New York	2 421	1.3	812	.3	739	.8
Pennsylvania	3 374	1.8	3 003	1.2	2 506	2.8
EAST NORTH CENTRAL STATES						
Illinois	18 851	10.3	24 381	9.8	3 353	3.8
Indiana	4 387	2.4	4 472	1.8	1 033	1.2
Michigan	6 746	3.7	4 398	1.8	2 038	2.3
Ohio	15 287	8.4	4 822	1.9	2 204	2.5
Wisconsin	74 401	40.7	128 411	51.6	5 369	6.0
WEST NORTH CENTRAL STATES						
Iowa	4 432	2.4	6 719	2.7	1 600	1.8
Kansas	903	.5	541	.2	346	.4
Minnesota	9 987	5.5	10 264	4.1	2 159	2.4
Missouri	2 765	1.5	2 036	.8	989	1.1
Nebraska	960	.5	491	.2	282	.3
North Dakota	616	.3	2 560	1.0	1 105	1.2
South Dakota	724	.4	374	.2	210	.2
SOUTH ATLANTIC STATES						
Delaware	257	.1	S	S	S	S
District of Columbia	S	S	S	S	S	S
Florida	1 584	.9	533	.2	731	.8
Georgia	1 938	1.1	1 176	.5	1 269	1.4
Maryland	835	.5	256	.1	230	.3
North Carolina	1 924	1.1	578	.2	572	.6
South Carolina	1 284	.7	449	.2	457	.5
Virginia	939	.5	295	.1	278	.3
West Virginia	298	.2	S	S	S	S
EAST SOUTH CENTRAL STATES						
Alabama	995	.5	1 269	.5	1 189	1.3
Kentucky	2 080	1.1	S	S	S	S
Mississippi	635	.3	404	.2	376	.4
Tennessee	3 434	1.9	817	.3	605	.7
WEST SOUTH CENTRAL STATES						
Arkansas	1 087	.6	712	.3	615	.7
Louisiana	640	.3	1 474	.6	1 802	2.0
Oklahoma	331	.2	296	.1	265	.3
Texas	3 142	1.7	3 120	1.3	4 005	4.5
MOUNTAIN STATES						
Arizona	385	.2	94	—	175	.2
Colorado	574	.3	80	—	83	—
Idaho	368	.2	285	.1	461	.5
Montana	269	.1	13 454	5.4	14 302	16.1
Nevada	127	—	25	—	46	—
New Mexico	132	—	135	—	195	.2
Utah	165	—	S	S	S	S
Wyoming	247	.1	22 932	9.2	28 427	32.0
PACIFIC STATES						
Alaska	S	S	S	S	S	S
California	6 179	3.4	854	.3	1 857	2.1
Hawaii	S	S	S	S	S	S
Oregon	633	.3	751	.3	1 671	1.9
Washington	561	.3	549	.2	996	1.1

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

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

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

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

Discussion of Survey Changes and Comparing Estimates

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

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

INDUSTRY COVERAGE CHANGES

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

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

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

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

No adjustments have been made to the 1993 CFS estimates.

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

AUXILIARY ESTABLISHMENT COVERAGE CHANGES

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

COMPARISON DATA AND STATISTICAL VALIDITY

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

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

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

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

Mode of transportation	Value			Tons			Ton-miles ¹			Average miles per shipment		
	2002 (million dollars)	1997 (million dollars)	Percent change	2002 (thousands)	1997 (thousands)	Percent change	2002 (millions)	1997 (millions)	Percent change	2002	1997	Percent change
Total	217 451	177 858	22.3	229 502	233 880	-1.9	70 753	46 688	51.5	642	537	19.4
Single modes	179 774	152 365	18.0	218 134	229 473	-4.9	66 184	43 873	50.9	203	204	-4
Truck ²	172 120	144 503	19.1	169 843	209 287	-18.8	34 949	33 481	4.4	183	167	9.2
Rail	4 190	3 857	8.6	37 956	14 801	156.4	22 347	7 467	199.3	787	719	9.4
Water	S	452	S	S	3 047	S	S	S	S	1 227	1 506	-18.5
Air (includes truck and air)	1 993	3 033	-34.3	55	56	-1.9	65	56	15.9	1 243	1 275	-2.5
Pipeline ³	S	520	S	S	2 283	S	S	S	S	S	S	S
Multiple modes	29 984	19 781	51.6	2 435	1 254	94.2	2 928	1 252	133.8	911	866	5.2
Parcel, U.S. Postal Service or courier ..	22 439	18 917	18.6	749	668	12.2	607	480	26.6	909	865	5.1
Truck and rail	S	827	S	1 673	572	192.4	2 279	691	229.7	1 408	1 326	6.2
All other multiple modes	59	37	62.2	12	13	-8.5	S	S	S	2 325	6 724	-65.4
Other and unknown modes ...	7 693	5 712	34.7	8 933	3 153	183.3	1 641	1 562	5.0	S	140	S

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

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

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

³Estimates for pipeline exclude shipments of crude petroleum.

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

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

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

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

SCTG code	Commodity description	Value			Tons			Ton-miles ¹			Average miles per shipment		
		2002 (million dollars)	1997 (million dollars)	Percent change	2002 (thousands)	1997 (thousands)	Percent change	2002 (millions)	1997 (millions)	Percent change	2002	1997	Percent change
	Total²	217 451	177 858	22.3	229 502	233 880	-1.9	70 753	46 688	51.5	642	537	19.4
01-05	Agricultural products and fish	11 057	9 365	18.1	41 984	18 449	127.6	S	6 287	S	294	480	-38.8
06-09	Grains, alcohol, and tobacco products	31 372	25 311	23.9	23 483	18 831	24.7	8 070	7 188	12.3	370	502	-26.3
10-14	Stones, nonmetallic minerals, and metallic ores	675	667	1.3	63 533	85 492	-25.7	12 525	4 048	209.4	113	51	121.1
15-19	Coal and petroleum products	2 836	7 103	-60.1	11 897	31 065	-61.7	4 508	2 322	94.1	117	36	222.2
20-24	Basic chemicals, chemical, and pharmaceutical products	18 860	17 402	8.4	18 010	8 466	112.7	6 371	2 649	140.5	319	462	-31.1
25-30	Logs, wood products, and textile and leather	31 505	25 596	23.1	20 204	24 393	-17.2	8 659	12 226	-29.2	888	765	16.1
31-34	Base metal and machinery ..	35 653	38 293	-6.9	27 993	32 131	-12.9	5 739	6 736	-14.8	318	427	-25.5
35-38	Electronic, motorized vehicles, and precision instruments	39 648	34 646	14.4	7 871	4 694	67.7	2 994	2 317	29.2	414	408	1.6
39-43	Furniture, mixed freight and misc. manufactured prod. ..	45 323	18 900	139.8	14 260	9 470	50.6	3 200	2 762	15.9	812	802	1.3
--	Commodity unknown	521	574	-9.4	266	S	S	54	154	-64.9	252	533	-52.8

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

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

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

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

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

Appendix A.

Comparability With the 1993 and 1997 Commodity Flow Surveys

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

Industry Coverage

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

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

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

Commodity Classification System

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

Sample Size

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

Survey Methodology

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

Reported Mode of Transportation

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

Data Items Requested

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

Appendix B.

Reliability of the Estimates

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

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

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

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

Sampling Error

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

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

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

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

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

Nonsampling Error

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

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

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

DEFINITION OF TERMS

Confidentiality

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

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

Disclosure Limitation

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

Unpublished Estimates

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

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

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

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

Mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
Total	5.2	—	9.1	—	14.0	—	9.5
Single modes	3.9	1.5	9.1	1.2	15.1	1.3	8.0
Truck	4.2	1.8	11.3	4.5	7.8	5.6	8.3
For-hire truck	6.7	1.7	17.8	4.6	7.9	4.5	7.7
Private truck	4.8	1.8	14.1	3.9	19.7	2.8	10.5
Rail	26.5	.5	25.0	3.3	15.5	4.8	7.7
Water	S	S	S	S	S	S	33.3
Shallow draft	S	S	S	S	S	S	29.8
Great Lakes	S	S	S	S	S	S	31.6
Deep draft	S	S	S	S	S	S	38.6
Air (includes truck and air)	15.7	.2	41.6	—	37.8	—	9.0
Pipeline	S	S	S	S	S	S	S
Multiple modes	18.6	1.8	13.9	.2	16.9	1.0	4.2
Parcel, U.S. Postal Service or courier	18.3	1.8	16.8	—	20.0	.2	4.4
Truck and rail	S	S	24.2	.2	25.5	1.0	6.7
Truck and water	46.9	—	S	S	S	S	26.5
Rail and water	S	S	S	S	S	S	31.6
Other multiple modes	S	S	S	S	S	S	29.8
Other and unknown modes	23.4	.9	36.9	1.2	30.2	.8	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-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	1.5	.8	1.2	.5	1.3	1.1
Truck	1.8	1.0	4.5	1.8	5.6	3.6
For-hire truck	1.7	1.7	4.6	3.4	4.5	3.8
Private truck	1.8	1.2	3.9	4.8	2.8	2.6
Rail .....	.5	.3	3.3	1.0	4.8	1.6
Water	S	—	S	.6	S	S
Shallow draft	S	S	S	S	S	S
Great Lakes	S	—	S	.3	S	S
Deep draft	S	S	S	S	S	S
Air (includes truck and air) .....	.2	.3	—	—	—	—
Pipeline	S	.1	S	.5	S	S
Multiple modes	1.8	.6	.2	.1	1.0	.2
Parcel, U.S. Postal Service or courier	1.8	.6	—	—	.2	—
Truck and rail	S	—	.2	.1	1.0	.2
Truck and water	—	—	S	S	S	S
Rail and water	S	S	S	S	S	S
Other multiple modes	S	S	S	S	S	S
Other and unknown modes .....	.9	.4	1.2	.4	.8	1.0

— 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	14.0	—	9.5
Truck	7.8	5.6	8.3
Rail	15.5	4.8	7.7
Shallow draft	S	S	29.8
Great Lakes	S	S	31.6
Deep draft	S	S	38.6
Air	37.8	—	9.0
Parcel, U.S. Postal Service or courier	S	S	31.6
Pipeline	S	S	S
Other and unknown modes	30.2	.8	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-3. Estimated Measures of Reliability for Shipment Characteristics by Mode of Transportation and Distance Shipped for State of Origin: 2002

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

Mode of transportation and distance shipped (based on Great Circle Distance)	Value		Tons		Ton-miles	
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage
Total	5.2	-	9.1	-	14.0	-
Less than 50 miles	7.0	1.7	14.2	3.8	16.6	.4
50 to 99 miles	5.7	.7	30.5	2.8	36.2	1.9
100 to 249 miles	6.6	1.0	13.4	1.7	13.2	1.4
250 to 499 miles	9.6	.7	11.6	1.4	13.5	2.4
500 to 749 miles	8.6	.6	12.5	.7	12.1	2.1
750 to 999 miles	10.4	.8	33.1	2.8	38.1	5.3
1,000 to 1,499 miles	10.8	.5	15.8	.4	16.2	1.5
1,500 to 1,999 miles	13.7	.5	8.4	.2	8.5	1.4
2,000 miles or more	S	S	S	S	S	S
Single modes	3.9	-	9.1	-	15.1	-
Less than 50 miles	6.8	1.6	14.2	4.0	15.0	.4
50 to 99 miles	5.9	.8	30.9	2.9	37.3	2.0
100 to 249 miles	6.8	1.0	14.1	1.7	13.6	1.7
250 to 499 miles	8.1	.8	11.9	1.5	13.7	2.6
500 to 749 miles	7.9	.6	13.0	.6	12.6	2.0
750 to 999 miles	9.3	.7	34.9	3.0	39.8	5.6
1,000 to 1,499 miles	10.5	.5	14.7	.3	15.1	1.5
1,500 to 1,999 miles	12.0	.4	9.7	.2	10.0	1.3
2,000 miles or more	44.8	-	42.4	-	45.8	-
Truck	4.2	-	11.3	-	7.8	-
Less than 50 miles	7.0	1.7	15.7	4.4	17.2	.6
50 to 99 miles	5.8	.8	25.2	1.7	24.0	.9
100 to 249 miles	6.9	.9	17.2	1.8	17.6	1.7
250 to 499 miles	8.8	.8	15.0	1.5	14.0	2.1
500 to 749 miles	8.4	.6	14.4	.6	13.9	1.7
750 to 999 miles	10.0	.6	13.9	.7	13.5	2.0
1,000 to 1,499 miles	11.4	.5	18.3	.4	18.1	1.7
1,500 to 1,999 miles	13.4	.4	15.7	.2	15.7	1.5
2,000 miles or more	S	S	S	S	S	S
For-hire truck	6.7	-	17.8	-	7.9	-
Less than 50 miles	9.1	1.0	33.9	5.5	21.5	.5
50 to 99 miles	9.0	.7	33.4	1.8	28.0	.9
100 to 249 miles	8.0	1.0	9.2	2.1	8.3	1.0
250 to 499 miles	11.3	1.2	13.9	2.3	13.6	2.0
500 to 749 miles	8.2	.6	13.9	.9	13.2	1.6
750 to 999 miles	12.9	.8	16.9	1.1	16.4	2.3
1,000 to 1,499 miles	12.5	.9	21.0	.6	20.7	1.8
1,500 to 1,999 miles	15.1	.8	14.1	.4	14.1	1.8
2,000 miles or more	S	S	S	S	S	S
Private truck	4.8	-	14.1	-	19.7	-
Less than 50 miles	7.0	2.4	16.1	5.0	18.9	1.4
50 to 99 miles	9.1	1.5	22.6	2.2	24.2	1.3
100 to 249 miles	9.2	1.3	27.3	2.1	29.5	3.3
250 to 499 miles	9.1	.6	35.1	1.8	33.3	4.0
500 to 749 miles	18.2	.7	27.4	.3	28.3	2.1
750 to 999 miles	17.3	.5	20.0	.2	20.1	2.0
1,000 to 1,499 miles	30.7	.4	26.3	.1	25.7	.9
1,500 to 1,999 miles	22.8	.1	42.0	-	42.7	1.4
2,000 miles or more	-	-	-	-	-	-
Rail	26.5	-	25.0	-	15.5	-
Less than 50 miles	29.6	1.8	S	S	44.5	.2
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	42.2	1.5	30.6	4.8	32.3	2.1
250 to 499 miles	25.9	4.7	29.7	6.1	30.2	6.0
500 to 749 miles	19.2	6.3	23.9	3.4	24.7	5.4
750 to 999 miles	31.9	7.4	28.1	8.6	30.4	8.5
1,000 to 1,499 miles	39.5	2.5	38.4	1.2	39.0	1.7
1,500 to 1,999 miles	50.0	5.3	30.3	1.1	30.2	3.1
2,000 miles or more	-	-	-	-	-	-
Water	S	S	S	S	S	S
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	-	-	-	-	-	-
100 to 249 miles	-	-	-	-	-	-
250 to 499 miles	-	-	-	-	-	-
500 to 749 miles	S	S	S	S	S	S
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	-	-	-	-	-	-
1,500 to 1,999 miles	-	-	-	-	-	-
2,000 miles or more	-	-	-	-	-	-
Shallow draft	S	S	S	S	S	S
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	-	-	-	-	-	-
100 to 249 miles	-	-	-	-	-	-
250 to 499 miles	-	-	-	-	-	-
500 to 749 miles	-	-	-	-	-	-
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	-	-	-	-	-	-
1,500 to 1,999 miles	-	-	-	-	-	-
2,000 miles or more	-	-	-	-	-	-

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	S	S	S	S	S	S
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	S	S	S	S	S	S
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—
Air (includes truck and air)	15.7	—	41.6	—	37.8	—
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	S	S	29.3	.7	29.4	.4
100 to 249 miles	35.9	3.2	34.0	5.5	34.9	4.0
250 to 499 miles	27.2	7.8	S	S	S	S
500 to 749 miles	29.2	4.6	26.9	5.8	26.4	5.7
750 to 999 miles	34.5	2.5	49.2	2.5	46.8	2.4
1,000 to 1,499 miles	28.0	1.9	42.9	2.9	44.2	3.3
1,500 to 1,999 miles	23.4	2.3	29.8	6.5	29.6	8.0
2,000 miles or more	45.3	.1	S	S	S	S
Pipeline	S	S	S	S	S	S
Less than 50 miles	—	—	—	—	S	S
50 to 99 miles	—	—	—	—	S	S
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	—	—	—	—	S	S
500 to 749 miles	—	—	—	—	S	S
750 to 999 miles	—	—	—	—	S	S
1,000 to 1,499 miles	—	—	—	—	S	S
1,500 to 1,999 miles	—	—	—	—	S	S
2,000 miles or more	—	—	—	—	S	S
Multiple modes	18.6	—	13.9	—	16.9	—
Less than 50 miles	25.5	1.0	44.1	2.1	S	S
50 to 99 miles	18.2	.7	19.0	1.0	22.5	.1
100 to 249 miles	17.9	1.5	18.3	.7	17.9	.2
250 to 499 miles	28.2	1.5	34.9	2.3	34.6	1.0
500 to 749 miles	17.2	1.4	25.1	6.1	25.3	4.7
750 to 999 miles	21.6	2.2	22.7	3.1	22.7	3.1
1,000 to 1,499 miles	23.9	.7	29.9	1.2	33.1	1.9
1,500 to 1,999 miles	23.6	.8	23.9	3.8	24.5	5.1
2,000 miles or more	S	S	S	S	S	S
Parcel, U.S. Postal Service or courier	18.3	—	16.8	—	20.0	—
Less than 50 miles	25.9	.9	14.4	1.6	20.3	—
50 to 99 miles	19.1	.5	20.1	1.0	25.7	.2
100 to 249 miles	18.9	1.8	20.9	2.2	20.0	.9
250 to 499 miles	21.4	1.2	21.8	1.6	22.8	.9
500 to 749 miles	18.0	.9	17.7	.8	17.7	1.0
750 to 999 miles	26.3	2.6	23.0	2.5	22.3	1.9
1,000 to 1,499 miles	22.4	.7	26.6	1.2	27.3	1.9
1,500 to 1,999 miles	19.6	1.1	26.7	1.3	26.7	2.5
2,000 miles or more	33.0	—	39.6	.2	41.6	.8
Truck and rail	S	S	24.2	—	25.5	—
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	S	S	S	S	S	S
500 to 749 miles	S	S	33.0	9.2	32.9	7.3
750 to 999 miles	S	S	36.9	5.0	36.2	4.1
1,000 to 1,499 miles	S	S	S	S	S	S
1,500 to 1,999 miles	S	S	29.0	8.6	29.1	8.8
2,000 miles or more	S	S	S	S	S	S
Truck and water	46.9	—	S	S	S	S
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	S	S	S	S	S	S
750 to 999 miles	—	—	—	—	—	—
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	S	S	S	S	S	S
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	—	—	—	—	—	—
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	S	S	S	S	S	S
Other multiple modes	S	S	S	S	S	S
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	S	S	S	S	S	S
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—
Other and unknown modes	23.4	—	36.9	—	30.2	—
Less than 50 miles	30.2	6.1	S	S	S	S
50 to 99 miles	38.9	1.9	37.4	6.7	36.5	3.7
100 to 249 miles	43.7	2.8	48.7	4.4	S	S
250 to 499 miles	S	S	43.6	2.3	45.9	2.2
500 to 749 miles	31.4	3.1	S	S	S	S
750 to 999 miles	S	S	39.2	5.5	38.6	6.6
1,000 to 1,499 miles	47.4	2.4	S	S	S	S
1,500 to 1,999 miles	48.4	4.7	29.4	1.6	29.2	5.1
2,000 miles or more	S	S	S	S	S	S

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

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

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

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

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

Mode of transportation and shipment weight	Value		Tons		Ton-miles		Average miles per shipment— coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
Total	5.2	—	9.1	—	14.0	—	9.5
Less than 50 lb	15.3	1.4	17.5	—	20.4	2	9.1
50 to 99 lb	15.2	.4	16.1	—	22.7	—	10.8
100 to 499 lb	10.9	.9	10.4	.1	13.4	.1	9.1
500 to 749 lb	11.0	.3	12.1	—	19.2	.1	12.8
750 to 999 lb	14.0	.2	15.9	—	12.8	—	15.0
1,000 to 9,999 lb	18.4	2.8	9.0	.7	13.7	1.3	9.4
10,000 to 49,999 lb	4.5	1.8	14.3	6.1	9.0	5.1	12.9
50,000 to 99,999 lb	24.7	.6	34.6	2.4	32.4	1.7	12.0
100,000 lb or more	24.2	.7	29.3	6.5	29.4	6.3	13.1
Single modes	3.9	—	9.1	—	15.1	—	8.0
Less than 50 lb	14.0	.5	22.3	—	14.4	—	18.0
50 to 99 lb	14.9	.2	18.5	—	18.0	—	14.2
100 to 499 lb	11.9	.9	11.3	.1	12.4	.1	8.8
500 to 749 lb	11.9	.3	13.0	—	20.0	.1	12.0
750 to 999 lb	13.2	.2	15.7	—	12.2	—	14.9
1,000 to 9,999 lb	10.0	1.6	7.8	.7	6.7	1.3	10.3
10,000 to 49,999 lb	4.7	1.6	14.3	6.0	9.6	5.2	12.0
50,000 to 99,999 lb	26.7	.7	35.0	2.7	35.9	1.8	12.4
100,000 lb or more	24.8	.9	29.1	6.3	29.8	6.4	13.5
Truck²	4.2	—	11.3	—	7.8	—	8.3
Less than 50 lb	16.0	.5	22.8	—	17.7	—	14.8
50 to 99 lb	14.4	.2	18.6	—	18.3	—	14.3
100 to 499 lb	11.8	.9	11.2	.2	12.2	.3	9.5
500 to 749 lb	11.3	.3	12.9	.1	19.0	.3	11.7
750 to 999 lb	13.5	.3	15.8	—	12.3	.1	14.9
1,000 to 9,999 lb	10.1	1.7	7.8	1.0	6.9	1.4	10.4
10,000 to 49,999 lb	5.0	1.5	14.3	5.3	9.8	2.9	11.8
50,000 to 99,999 lb	28.4	.7	35.6	2.8	38.3	2.8	11.6
100,000 lb or more	25.1	.3	S	S	32.0	.9	S
For-hire truck	6.7	—	17.8	—	7.9	—	7.7
Less than 50 lb	21.4	.1	16.8	—	16.7	—	8.3
50 to 99 lb	17.1	—	13.4	—	14.5	—	5.7
100 to 499 lb	14.3	.9	10.8	.1	11.4	.2	4.9
500 to 749 lb	15.8	.5	11.7	.1	19.2	.3	8.9
750 to 999 lb	9.1	.2	10.4	—	15.9	.2	13.2
1,000 to 9,999 lb	15.2	2.0	12.2	1.1	8.6	1.4	11.3
10,000 to 49,999 lb	6.1	1.7	20.8	4.1	10.3	2.3	13.0
50,000 to 99,999 lb	27.6	.7	42.7	3.2	27.3	1.8	45.6
100,000 lb or more	25.4	.2	35.3	1.1	41.7	1.1	27.6
Private truck	4.8	—	14.1	—	19.7	—	10.5
Less than 50 lb	20.9	1.1	25.9	—	33.9	—	16.0
50 to 99 lb	17.6	.4	21.3	—	34.3	—	13.6
100 to 499 lb	16.5	1.3	14.5	.3	25.6	.6	13.0
500 to 749 lb	13.9	.4	16.6	.2	21.4	.4	17.4
750 to 999 lb	28.6	.5	21.3	.1	13.4	.2	20.2
1,000 to 9,999 lb	6.6	2.1	9.9	2.6	12.4	2.3	14.9
10,000 to 49,999 lb	6.6	2.6	18.2	6.0	20.6	4.7	12.5
50,000 to 99,999 lb	37.5	1.1	34.8	3.2	S	S	20.6
100,000 lb or more	44.5	.7	S	S	25.2	1.3	S
Rail	26.5	—	25.0	—	15.5	—	7.7
Less than 50 lb	S	S	S	S	S	S	33.9
50 to 99 lb	S	S	S	S	S	S	28.0
100 to 499 lb	S	S	S	S	S	S	27.9
500 to 749 lb	S	S	S	S	S	S	29.8
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	S	S	42.7	—	37.9	—	19.9
10,000 to 49,999 lb	39.6	5.0	30.0	.3	30.0	.5	16.9
50,000 to 99,999 lb	43.1	3.2	44.4	.4	40.2	.3	23.2
100,000 lb or more	28.5	5.7	25.4	.6	15.7	.6	9.9
Water	S	S	S	S	S	S	33.3
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	S	S	S	S	S	S	31.6
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	—	—	—	—	—	—	—
10,000 to 49,999 lb	S	S	S	S	S	S	31.6
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	S	S	S	S	S	S	29.2
Shallow draft	S	S	S	S	S	S	29.8
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	—	—	—	—	—	—	—
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	—	—	—	—	—	—	—
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	S	S	S	S	S	S	29.8

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	S	S	S	S	S	S	31.6
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	—	—	—	—	—	—	—
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—
Deep draft	S	S	S	S	S	S	38.6
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	S	S	S	S	S	S	31.6
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	S	S	S	S	S	S	32.3
Air (includes truck and air)	15.7	—	41.6	—	37.8	—	9.0
Less than 50 lb	22.2	6.5	34.9	1.3	34.3	1.5	10.2
50 to 99 lb	40.4	2.8	25.1	1.6	26.3	1.7	9.9
100 to 499 lb	22.4	4.7	28.3	5.5	27.9	6.2	6.2
500 to 749 lb	39.5	2.3	29.1	1.6	31.8	1.6	12.5
750 to 999 lb	46.7	1.6	36.9	1.9	S	S	24.2
1,000 to 9,999 lb	34.9	7.2	22.8	8.8	32.5	7.3	17.2
10,000 to 49,999 lb	S	S	S	S	S	S	32.7
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—
Pipeline³	S	S	S	S	S	S	S
Less than 50 lb	S	S	S	S	S	S	S
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	—	—	—	—	—	—	—
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	—	—	—	—	—	—	—
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—
Multiple modes	18.6	—	13.9	—	16.9	—	4.2
Less than 50 lb	18.2	6.9	19.5	4.6	21.5	5.1	4.5
50 to 99 lb	26.9	1.4	26.4	2.0	29.9	1.7	7.3
100 to 499 lb	24.4	2.5	22.4	4.1	28.1	3.6	9.0
500 to 749 lb	S	S	33.8	.6	44.7	.7	18.8
750 to 999 lb	48.0	.1	42.5	.3	44.2	.2	20.9
1,000 to 9,999 lb	S	S	S	S	S	S	35.4
10,000 to 49,999 lb	24.4	3.8	29.1	9.7	27.3	9.2	9.5
50,000 to 99,999 lb	S	S	S	S	S	S	30.0
100,000 lb or more	S	S	S	S	S	S	30.5
Parcel, U.S. Postal Service or courier	18.3	—	16.8	—	20.0	—	4.4
Less than 50 lb	18.2	4.1	19.5	4.8	21.5	5.7	4.5
50 to 99 lb	26.9	1.5	26.4	1.6	29.9	2.0	7.3
100 to 499 lb	24.7	2.5	22.8	3.7	29.4	4.1	9.5
500 to 749 lb	S	S	34.1	.7	45.6	.9	18.7
750 to 999 lb	49.6	.1	43.8	.7	47.1	.4	18.2
1,000 to 9,999 lb	S	S	S	S	S	S	29.8
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—
Truck and rail	S	S	24.2	—	25.5	—	6.7
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	—	—	—	—	—	—	—
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	S	S	S	S	S	S	31.6
1,000 to 9,999 lb	S	S	S	S	S	S	15.6
10,000 to 49,999 lb	S	S	29.4	10.9	27.5	10.7	8.9
50,000 to 99,999 lb	S	S	S	S	S	S	30.0
100,000 lb or more	S	S	S	S	S	S	30.6
Truck and water	46.9	—	S	S	S	S	26.5
Less than 50 lb	S	S	S	S	S	S	31.9
50 to 99 lb	S	S	S	S	S	S	31.6
100 to 499 lb	S	S	S	S	S	S	32.4
500 to 749 lb	S	S	S	S	S	S	S
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	S	S	S	S	S	S	30.3
10,000 to 49,999 lb	S	S	S	S	S	S	S
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—

See footnote at end of table.

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

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

Mode of transportation and shipment weight	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
Multiple modes—Con.							
Rail and water	S	S	S	S	S	S	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	S	S	S	S	S	S	31.6
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	29.8
Less than 50 lb	S	S	S	S	S	S	31.6
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	S	S	S	S	S	S	31.6
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	—	—	—	—	—	—	—
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
Other and unknown modes	23.4	—	36.9	—	30.2	—	S
Less than 50 lb	38.5	2.8	34.2	4	S	S	S
50 to 99 lb	35.7	.5	34.3	2	S	S	S
100 to 499 lb	47.8	2.5	34.0	1.4	S	S	S
500 to 749 lb	46.3	1.8	42.7	7	47.9	—	S
750 to 999 lb	44.6	.2	S	S	36.7	—	S
1,000 to 9,999 lb	41.1	6.0	26.2	9.8	34.6	7.2	21.7
10,000 to 49,999 lb	32.9	7.7	S	S	31.8	8.9	S
50,000 to 99,999 lb	S	S	39.0	2.5	S	S	34.8
100,000 lb or more	S	S	40.9	11.2	S	S	30.2

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

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

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

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

SCTG code	Commodity description	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
		Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
	Total	5.2	—	9.1	—	14.0	—	9.5
01	Live animals and live fish	S	S	S	S	S	S	31.6
02	Cereal grains	40.3	.5	42.8	3.9	42.7	5.7	S
03	Other agricultural products	S	S	S	S	S	S	27.5
04	Animal feed and products of animal origin, n.e.c.	S	S	S	S	S	S	S
05	Meat, fish, seafood, and their preparations	31.3	1.0	21.6	.3	37.5	.7	41.1
06	Milled grain products and preparations, and bakery products	22.1	.2	33.5	.4	S	S	25.3
07	Other prepared foodstuffs and fats and oils	12.0	1.1	20.2	1.5	25.6	2.5	28.6
08	Alcoholic beverages	28.4	.3	23.8	.3	32.9	.2	18.7
09	Tobacco products	S	S	S	S	S	S	24.5
10	Monumental or building stone	S	S	S	S	S	S	26.1
11	Natural sands	27.0	—	30.2	.7	35.1	.7	S
12	Gravel and crushed stone	14.8	—	12.7	3.2	33.9	5.1	S
13	Nonmetallic minerals n.e.c.	S	S	S	S	S	S	35.8
14	Metallic ores and concentrates	S	S	S	S	S	S	31.6
15	Coal	—	—	—	—	—	—	—
17	Gasoline and aviation turbine fuel	40.2	.3	45.1	1.0	S	S	29.6
18	Fuel oils	16.5	—	19.1	.6	41.3	2.2	S
19	Coal and petroleum products, n.e.c.	S	S	48.8	.2	S	S	S
20	Basic chemicals	30.1	.2	34.5	.3	42.6	.3	27.3
21	Pharmaceutical products	26.9	.1	S	S	S	S	23.3
22	Fertilizers	S	S	S	S	S	S	26.0
23	Chemical products and preparations, n.e.c.	27.9	.9	34.6	.7	35.2	1.6	44.6
24	Plastics and rubber	13.0	.6	26.7	.5	24.4	.5	17.1
25	Logs and other wood in the rough	S	S	S	S	S	S	35.0
26	Wood products	13.6	.5	33.7	1.9	38.8	1.0	13.2
27	Pulp, newsprint, paper, and paperboard	30.8	.9	26.7	.4	26.0	1.1	10.2
28	Paper or paperboard articles	19.7	.7	31.3	.7	24.8	1.0	17.9
29	Printed products	13.6	.2	22.6	.4	32.9	1.2	15.4
30	Textiles, leather, and articles of textiles or leather	28.5	.9	28.2	—	28.7	.1	5.2
31	Nonmetallic mineral products	32.1	.5	S	S	41.5	.8	21.1
32	Base metal in primary or semifinished forms and in finished basic shapes	20.6	.7	20.9	.6	21.3	.6	20.5
33	Articles of base metal	16.4	.7	21.9	.2	20.3	.4	32.3
34	Machinery	10.9	.8	15.0	.1	23.3	.6	23.9
35	Electronic and other electrical equipment and components and office equipment	10.7	.7	15.0	—	20.1	.3	12.4
36	Motorized and other vehicles (including parts)	43.1	3.2	49.5	1.0	34.1	.8	26.6
37	Transportation equipment, n.e.c.	25.9	—	41.2	—	S	S	20.7
38	Precision instruments and apparatus	35.2	.5	S	S	S	S	11.2
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	22.9	.4	12.4	—	19.9	.2	25.1
40	Miscellaneous manufactured products	13.5	.8	16.5	.3	23.9	.5	8.1
41	Waste and scrap	S	S	S	S	45.3	.1	45.3
43	Mixed freight	6.8	1.0	9.7	.6	8.5	.3	12.7
--	Commodity unknown	41.6	.1	46.6	—	48.3	—	35.6

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

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

SCTG code	Commodity description	Value (percent)		Tons (percent)		Ton-miles ¹ (percent)	
		2002	1997	2002	1997	2002	1997
	Total	-	-	-	-	-	-
01	Live animals and live fish	S	-	S	S	S	-
02	Cereal grains .....	.5	.1	3.9	.8	5.7	2.6
03	Other agricultural products	S	.1	S	.1	S	.4
04	Animal feed and products of animal origin, n.e.c.	S	.1	S	.5	S	.6
05	Meat, fish, seafood, and their preparations	1.0	.3	.3	.2	.7	.4
06	Milled grain products and preparations, and bakery products .....	.2	.2	.4	.4	S	.9
07	Other prepared foodstuffs and fats and oils	1.1	.6	1.5	1.2	2.5	1.1
08	Alcoholic beverages .....	.3	-	.3	-	.2	.2
09	Tobacco products	S	.1	S	-	S	-
10	Monumental or building stone	S	S	S	S	S	-
11	Natural sands	-	-	.7	2.1	.7	.6
12	Gravel and crushed stone	-	-	3.2	6.1	5.1	2.3
13	Nonmetallic minerals n.e.c.	S	-	S	.9	S	S
14	Metallic ores and concentrates	S	S	S	S	S	S
15	Coal	-	S	-	S	-	S
17	Gasoline and aviation turbine fuel .....	.3	1.0	1.0	S	S	1.3
18	Fuel oils .....	.4	.4	.6	.8	2.2	.5
19	Coal and petroleum products, n.e.c.	S	-	.2	.5	.6	.2
20	Basic chemicals .....	.2	.3	.3	.1	.3	.2
21	Pharmaceutical products .....	.1	.3	.3	-	S	-
22	Fertilizers	S	.1	S	.8	S	-
23	Chemical products and preparations, n.e.c. ....	.9	.5	.7	.1	1.6	.2
24	Plastics and rubber .....	.6	.4	.5	.3	.5	.4
25	Logs and other wood in the rough	S	-	S	-	S	-
26	Wood products .....	.5	.2	1.9	.8	1.0	.4
27	Pulp, newsprint, paper, and paperboard .....	.9	.5	.4	1.1	1.1	3.1
28	Paper or paperboard articles .....	.7	.4	.7	.4	1.0	.6
29	Printed products .....	.2	.3	.4	.1	1.2	.4
30	Textiles, leather, and articles of textiles or leather .....	.9	.2	-	-	.1	-
31	Nonmetallic mineral products .....	.5	.2	S	1.4	.8	1.2
32	Base metal in primary or semifinished forms and in finished basic shapes .....	.7	.5	.6	.6	.6	.8
33	Articles of base metal .....	.7	.6	.2	.2	.4	.5
34	Machinery .....	.8	.9	.1	.2	.6	.4
35	Electronic and other electrical equipment and components and office equipment .....	.7	.5	-	.1	.3	.1
36	Motorized and other vehicles (including parts)	3.2	1.4	1.0	.3	.8	.8
37	Transportation equipment, n.e.c.	-	.2	-	-	S	-
38	Precision instruments and apparatus .....	.5	.2	S	-	S	-
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs .....	.4	.1	-	-	.2	.2
40	Miscellaneous manufactured products .....	.8	.5	.3	.1	.5	.7
41	Waste and scrap	S	.1	S	.3	.1	.4
43	Mixed freight	1.0	.4	.6	S	.3	.1
--	Commodity unknown .....	.1	.1	-	S	-	.1

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

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

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

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
ALL COMMODITIES							
Total	5.2	—	9.1	—	14.0	—	9.5
Single modes	3.9	1.5	9.1	1.2	15.1	1.3	8.0
Truck	4.2	1.8	11.3	4.5	7.8	5.6	8.3
For-hire truck	6.7	1.7	17.8	4.6	7.9	4.5	7.7
Private truck	4.8	1.8	14.1	3.9	19.7	2.8	10.5
Rail	26.5	.5	25.0	3.3	15.5	4.8	7.7
Water	S	S	S	S	S	S	33.3
Shallow draft	S	S	S	S	S	S	29.8
Great Lakes	S	S	S	S	S	S	31.6
Deep draft	S	S	S	S	S	S	38.6
Air (includes truck and air)	15.7	.2	41.6	—	37.8	—	9.0
Pipeline	S	S	S	S	S	S	S
Multiple modes	18.6	1.8	13.9	.2	16.9	1.0	4.2
Parcel, U.S. Postal Service or courier	18.3	1.8	16.8	—	20.0	.2	4.4
Truck and rail	S	S	24.2	—	25.5	1.0	6.7
Truck and water	46.9	—	S	—	S	—	26.5
Rail and water	S	S	S	—	S	—	31.6
Other multiple modes	S	S	S	—	S	—	29.8
Other and unknown modes	23.4	.9	36.9	1.2	30.2	.8	S
SCTG 01, LIVE ANIMALS AND LIVE FISH							
Total	S	S	S	S	S	S	31.6
Single modes	S	S	S	S	S	S	31.6
Truck	—	—	—	—	—	—	—
For-hire truck	—	—	—	—	—	—	—
Private truck	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—
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	40.3	—	42.8	—	42.7	—	S
Single modes	40.3	—	42.8	—	42.7	—	S
Truck	S	S	S	S	S	S	S
For-hire truck	S	S	S	S	S	S	37.0
Private truck	S	S	S	S	S	S	S
Rail	S	S	S	S	S	S	29.8
Water	48.8	15.9	S	S	S	S	29.0
Shallow draft	S	S	S	S	S	S	29.8
Great Lakes	—	—	—	—	—	—	—
Deep draft	S	S	S	S	S	S	33.0
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	—	—	—	—	—	—	—
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—

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	\$	\$	\$	\$	\$	\$	27.5
Single modes	\$	\$	\$	\$	\$	\$	20.0
Truck	\$	\$	\$	\$	\$	\$	20.3
For-hire truck	\$	\$	\$	\$	\$	\$	26.9
Private truck	\$	\$	\$	\$	\$	\$	24.8
Rail	\$	\$	\$	\$	\$	\$	31.6
Water	\$	\$	\$	\$	\$	\$	29.8
Shallow draft	\$	\$	\$	\$	\$	\$	29.8
Great Lakes	\$	\$	\$	\$	\$	\$	—
Deep draft	\$	\$	\$	\$	\$	\$	31.6
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	\$	\$	\$
Multiple modes	\$	\$	\$	\$	\$	\$	28.0
Parcel, U.S. Postal Service or courier	\$	\$	\$	\$	\$	\$	28.0
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	\$	\$	\$	\$	\$	\$	31.6
SCTG 04, ANIMAL FEED AND PRODUCTS OF ANIMAL ORIGIN, N.E.C.							
Total	\$	\$	\$	\$	\$	\$	\$
Single modes	\$	\$	\$	\$	\$	\$	\$
Truck	\$	\$	\$	\$	\$	\$	\$
For-hire truck	\$	\$	\$	\$	\$	\$	27.4
Private truck	\$	\$	\$	\$	\$	\$	39.2
Rail	46.9	14.4	44.9	14.4	44.3	15.3	28.9
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	\$	\$	\$
Multiple modes	\$	\$	\$	\$	\$	\$	29.9
Parcel, U.S. Postal Service or courier	\$	\$	\$	\$	\$	\$	29.9
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	\$	\$	\$	\$	\$	\$	31.6
SCTG 05, MEAT, FISH, SEAFOOD, AND THEIR PREPARATIONS							
Total	31.3	—	21.6	—	37.5	—	41.1
Single modes	31.6	.5	21.7	.4	37.7	.6	\$
Truck	31.8	2.2	22.3	2.5	39.5	4.4	\$
For-hire truck	47.1	10.7	34.1	11.0	43.9	12.5	17.4
Private truck	30.8	10.4	29.6	10.8	41.2	11.8	\$
Rail	\$	\$	\$	\$	\$	\$	30.6
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	\$	\$	\$	\$	\$	\$	31.6
Pipeline	—	—	—	—	\$	\$	\$
Multiple modes	\$	\$	\$	\$	\$	\$	27.6
Parcel, U.S. Postal Service or courier	\$	\$	\$	\$	\$	\$	27.6
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	\$	\$	\$	\$	\$	\$	\$

See footnote at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
SCTG 06, MILLED GRAIN PRODUCTS AND PREPARATIONS, AND BAKERY PRODUCTS							
Total	22.1	—	33.5	—	S	S	25.3
Single modes	22.7	1.2	33.7	.5	S	S	41.6
Truck	22.8	1.1	34.7	2.5	S	S	40.4
For-hire truck	32.3	9.2	48.0	9.8	S	S	17.8
Private truck	S	S	34.7	9.8	27.5	8.1	25.4
Rail	S	S	43.0	2.7	44.6	7.7	25.9
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	48.7	1.1	48.2	.3	S	S	24.3
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	26.2
Truck and rail	S	S	S	S	S	S	26.6
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	31.6
SCTG 07, OTHER PREPARED FOODSTUFFS AND FATS AND OILS							
Total	12.0	—	20.2	—	25.6	—	28.6
Single modes	12.4	.8	20.3	.3	26.2	2.0	S
Truck	12.5	.8	20.3	.2	26.2	2.0	S
For-hire truck	20.7	8.0	17.3	8.5	30.6	7.3	10.2
Private truck	23.2	7.9	34.2	8.3	38.1	6.3	43.9
Rail	S	S	S	S	S	S	S
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	26.9
Pipeline	—	—	—	—	S	S	S
Multiple modes	38.8	.7	47.7	.1	44.0	1.6	9.9
Parcel, U.S. Postal Service or courier	S	S	49.8	—	S	S	14.2
Truck and rail	S	S	S	S	S	S	24.6
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	37.7	.2	46.7	.2	47.0	.5	27.9
SCTG 08, ALCOHOLIC BEVERAGES							
Total	28.4	—	23.8	—	32.9	—	18.7
Single modes	28.7	1.3	23.8	1.0	32.9	.2	18.7
Truck	28.7	1.3	23.8	1.0	32.9	.2	18.7
For-hire truck	S	S	S	S	S	S	S
Private truck	33.8	9.1	28.6	9.2	35.7	10.0	21.6
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	S
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	31.6
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	31.6

See footnote at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
SCTG 09, TOBACCO PRODUCTS							
Total	S	S	S	S	S	S	24.5
Single modes	S	S	S	S	S	S	25.1
Truck	S	S	S	S	S	S	25.1
For-hire truck	—	—	—	—	—	—	—
Private truck	S	S	S	S	S	S	25.1
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	31.6
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	31.6
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—
SCTG 10, MONUMENTAL OR BUILDING STONE							
Total	S	S	S	S	S	S	26.1
Single modes	S	S	S	S	S	S	25.9
Truck	S	S	S	S	S	S	25.9
For-hire truck	45.3	10.4	S	S	S	S	26.3
Private truck	S	S	S	S	S	S	29.1
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	31.6
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	31.6
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	31.6
SCTG 11, NATURAL SANDS							
Total	27.0	—	30.2	—	35.1	—	S
Single modes	28.0	2.8	31.2	2.6	35.1	.4	S
Truck	30.0	11.2	37.3	8.4	26.8	14.0	38.9
For-hire truck	S	S	42.1	7.2	36.8	5.6	S
Private truck	32.5	11.9	S	S	35.3	11.1	34.3
Rail	36.7	11.6	32.5	8.4	36.9	14.3	21.6
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	—	—	—	—	—	—	—
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	46.1	2.6	49.4	.4	24.8

See footnote at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
SCTG 12, GRAVEL AND CRUSHED STONE							
Total	14.8	—	12.7	—	33.9	—	S
Single modes	15.1	3.0	13.1	3.7	33.9	11.2	S
Truck	21.9	10.3	21.8	10.0	24.9	13.2	36.5
For-hire truck	36.4	7.0	39.3	7.1	30.1	6.1	S
Private truck	29.7	8.0	25.3	7.2	28.0	7.6	19.7
Rail	33.5	10.6	35.0	10.1	37.1	17.7	23.3
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	45.3	3.0	43.2	3.7	S	S	26.4
SCTG 13, NONMETALLIC MINERALS N.E.C.							
Total	S	S	S	S	S	S	35.8
Single modes	S	S	S	S	S	S	42.3
Truck	S	S	S	S	S	S	42.3
For-hire truck	S	S	S	S	S	S	31.4
Private truck	S	S	S	S	S	S	S
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	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 14, METALLIC ORES AND CONCENTRATES							
Total	S	S	S	S	S	S	31.6
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	S	S	S	S	S	S	31.6
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	31.6
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—

See footnote at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
SCTG 15, COAL							
Total	-	-	-	-	-	-	-
Single modes	-	-	-	-	-	-	-
Truck	-	-	-	-	-	-	-
For-hire truck	-	-	-	-	-	-	-
Private truck	-	-	-	-	-	-	-
Rail	-	-	-	-	-	-	-
Water	-	-	-	-	-	-	-
Shallow draft	-	-	-	-	-	-	-
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	-	-	-	-	-	-	-
Pipeline	-	-	-	-	S	S	S
Multiple modes	-	-	-	-	-	-	-
Parcel, U.S. Postal Service or courier	-	-	-	-	-	-	-
Truck and rail	-	-	-	-	-	-	-
Truck and water	-	-	-	-	-	-	-
Rail and water	-	-	-	-	-	-	-
Other multiple modes	-	-	-	-	-	-	-
Other and unknown modes	-	-	-	-	-	-	-
SCTG 17, GASOLINE AND AVIATION TURBINE FUEL							
Total	40.2	-	45.1	-	S	S	29.6
Single modes	39.9	.2	44.5	.3	S	S	30.1
Truck	35.8	2.4	37.0	4.4	S	S	33.0
For-hire truck	20.8	11.4	20.3	11.9	38.2	15.8	42.2
Private truck	S	S	S	S	S	S	S
Rail	S	S	S	S	S	S	31.6
Water	-	-	-	-	-	-	-
Shallow draft	-	-	-	-	-	-	-
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	-	-	-	-	-	-	-
Pipeline	-	-	-	-	S	S	S
Multiple modes	S	S	S	S	S	S	31.6
Parcel, U.S. Postal Service or courier	-	-	-	-	-	-	-
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	-	-	-	-	-	-	-
Rail and water	-	-	-	-	-	-	-
Other multiple modes	-	-	-	-	-	-	-
Other and unknown modes	-	-	-	-	-	-	-
SCTG 18, FUEL OILS							
Total	16.5	-	19.1	-	41.3	-	S
Single modes	16.5	-	19.1	-	41.3	-	S
Truck	25.5	11.6	26.1	13.0	S	S	S
For-hire truck	15.3	9.4	14.2	10.5	31.6	15.4	36.7
Private truck	43.3	10.4	48.7	10.2	S	S	S
Rail	S	S	S	S	S	S	26.6
Water	-	-	-	-	-	-	-
Shallow draft	-	-	-	-	-	-	-
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	-	-	-	-	-	-	-
Pipeline	-	-	-	-	S	S	S
Multiple modes	-	-	-	-	-	-	-
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	S	S	48.8	—	S	S	S
Single modes	S	S	49.0	2.3	S	S	S
Truck	S	S	43.6	11.4	S	S	S
For-hire truck	S	S	49.8	12.2	43.5	15.8	19.0
Private truck	35.7	15.3	28.4	17.4	46.5	10.9	S
Rail	S	S	S	S	S	S	29.1
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	29.8
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	30.2
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 20, BASIC CHEMICALS							
Total	30.1	—	34.5	—	42.6	—	27.3
Single modes	28.9	1.7	34.6	1.3	42.8	1.3	27.2
Truck	34.3	8.6	38.9	8.0	44.1	13.5	28.0
For-hire truck	40.7	9.3	39.9	11.6	37.6	12.1	24.2
Private truck	46.1	11.1	S	S	S	S	29.2
Rail	S	S	S	S	S	S	24.1
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	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	31.6
SCTG 21, PHARMACEUTICAL PRODUCTS							
Total	26.9	—	S	S	S	S	23.3
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	48.4
Private truck	43.4	3.9	S	S	S	S	28.9
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	27.9
Pipeline	—	—	—	—	S	S	S
Multiple modes	37.8	11.4	35.7	10.6	39.9	12.4	20.0
Parcel, U.S. Postal Service or courier	37.8	11.4	35.7	10.6	39.9	12.4	20.0
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	31.6

See footnote at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
SCTG 22, FERTILIZERS							
Total	S	S	S	S	S	S	26.0
Single modes	S	S	S	S	S	S	26.0
Truck	S	S	S	S	S	S	26.0
For-hire truck	S	S	S	S	S	S	28.5
Private truck	S	S	S	S	S	S	29.7
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 23, CHEMICAL PRODUCTS AND PREPARATIONS, N.E.C.							
Total	27.9	-	34.6	-	35.2	-	44.6
Single modes	27.1	2.9	33.8	4.3	37.7	9.7	S
Truck	27.1	2.9	33.8	4.3	37.7	9.7	S
For-hire truck	30.5	5.2	35.1	4.5	38.4	9.3	18.8
Private truck	37.0	6.6	46.3	5.4	S	S	31.2
Rail	-	-	-	-	-	-	-
Water	-	-	-	-	-	-	-
Shallow draft	-	-	-	-	-	-	-
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	S	S	S	S	S	S	30.1
Pipeline	-	-	-	-	S	S	S
Multiple modes	37.5	3.0	44.4	4.4	44.8	9.7	34.0
Parcel, U.S. Postal Service or courier	27.6	1.8	28.1	.4	31.4	.2	41.6
Truck and rail	45.1	3.7	44.9	4.6	45.0	9.8	26.0
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	26.5
SCTG 24, PLASTICS AND RUBBER							
Total	13.0	-	26.7	-	24.4	-	17.1
Single modes	14.1	2.5	27.2	1.5	26.3	3.1	26.2
Truck	14.7	3.1	20.5	6.8	16.0	7.5	26.4
For-hire truck	10.5	6.4	24.5	10.2	18.7	8.8	13.5
Private truck	35.6	6.9	44.4	10.0	S	S	21.9
Rail	S	S	S	S	S	S	37.1
Water	-	-	-	-	-	-	-
Shallow draft	-	-	-	-	-	-	-
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	36.8	.2	43.5	.1	S	S	11.2
Pipeline	-	-	-	-	S	S	S
Multiple modes	16.0	2.1	28.5	1.0	37.0	2.6	14.6
Parcel, U.S. Postal Service or courier	18.0	2.2	21.0	.8	31.7	2.1	14.8
Truck and rail	S	S	S	S	S	S	26.6
Truck and water	S	S	S	S	S	S	S
Rail and water	-	-	-	-	-	-	-
Other multiple modes	-	-	-	-	-	-	-
Other and unknown modes	S	S	48.9	1.1	S	S	S

See footnote at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
SCTG 25, LOGS AND OTHER WOOD IN THE ROUGH							
Total	S	S	S	S	S	S	35.0
Single modes	S	S	S	S	S	S	39.3
Truck	S	S	S	S	S	S	39.3
For-hire truck	S	S	S	S	S	S	31.6
Private truck	S	S	S	S	S	S	34.4
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	31.6
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	31.6
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—
SCTG 26, WOOD PRODUCTS							
Total	13.6	—	33.7	—	38.8	—	13.2
Single modes	13.8	1.4	33.9	2.1	38.9	.5	16.6
Truck	14.0	1.6	34.7	3.3	40.6	6.3	16.5
For-hire truck	23.2	7.7	38.8	8.6	S	S	16.6
Private truck	19.8	8.2	36.7	9.0	30.1	7.4	24.5
Rail	49.4	.8	48.5	3.2	48.8	6.3	26.6
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	30.1
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	47.4	.4	S
SCTG 27, PULP, NEWSPRINT, PAPER, AND PAPERBOARD							
Total	30.8	—	26.7	—	26.0	—	10.2
Single modes	31.4	1.6	26.9	.6	26.6	1.6	13.1
Truck	34.0	4.7	30.6	3.9	32.0	4.8	13.8
For-hire truck	36.3	4.6	32.4	4.0	32.2	4.8	4.5
Private truck	27.8	3.4	24.0	2.2	32.2	.2	40.4
Rail	21.7	4.0	18.8	3.8	14.5	4.0	11.8
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	31.6
Pipeline	—	—	—	—	S	S	S
Multiple modes	49.2	1.6	40.5	.4	43.9	1.3	21.3
Parcel, U.S. Postal Service or courier	S	S	49.4	—	S	S	21.5
Truck and rail	42.4	.3	44.9	.3	45.0	1.2	25.9
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	37.4

See footnote at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
SCTG 28, PAPER OR PAPERBOARD ARTICLES							
Total	19.7	—	31.3	—	24.8	—	17.9
Single modes	20.8	1.9	32.0	1.5	25.3	2.7	30.7
Truck	21.3	3.2	32.2	2.0	25.5	3.2	33.5
For-hire truck	23.0	6.0	34.1	6.5	23.7	3.4	34.3
Private truck	30.9	4.7	35.1	5.4	S	S	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	29.9
Pipeline	—	—	—	—	S	S	S
Multiple modes	29.0	1.7	34.4	1.3	47.6	2.6	11.2
Parcel, U.S. Postal Service or courier	30.2	1.2	33.5	.8	35.8	1.0	11.3
Truck and rail	S	S	46.2	.7	S	S	17.9
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	31.6
Other and unknown modes	S	S	45.8	.3	S	S	42.0
SCTG 29, PRINTED PRODUCTS							
Total	13.6	—	22.6	—	32.9	—	15.4
Single modes	13.1	2.6	17.2	3.9	25.5	5.8	47.0
Truck	13.1	2.9	17.2	3.9	26.5	5.9	S
For-hire truck	17.3	6.7	22.0	7.0	27.5	5.4	8.6
Private truck	45.0	7.6	46.4	7.0	S	S	S
Rail	S	S	S	S	S	S	26.3
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	16.2
Pipeline	—	—	—	—	S	S	S
Multiple modes	33.8	2.3	S	S	S	S	7.9
Parcel, U.S. Postal Service or courier	43.7	2.4	31.4	.4	32.0	.6	7.8
Truck and rail	33.6	1.3	S	S	S	S	17.7
Truck and water	S	S	S	S	S	S	S
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	32.7	1.0	30.6	1.7	43.0	1.4	S
SCTG 30, TEXTILES, LEATHER, AND ARTICLES OF TEXTILES OR LEATHER							
Total	28.5	—	28.2	—	28.7	—	5.2
Single modes	12.3	8.2	21.6	8.6	9.8	11.5	17.9
Truck	12.4	8.3	21.9	8.4	10.2	11.3	20.1
For-hire truck	8.9	7.7	10.2	9.3	9.8	11.4	6.7
Private truck	41.4	2.4	S	S	36.8	.7	28.9
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	36.9
Pipeline	—	—	—	—	S	S	S
Multiple modes	36.8	7.5	40.8	7.2	40.7	9.1	5.2
Parcel, U.S. Postal Service or courier	36.9	7.5	41.3	6.9	41.4	8.7	5.2
Truck and rail	38.3	—	41.8	.4	42.5	.7	21.8
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S

See footnote at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
SCTG 31, NONMETALLIC MINERAL PRODUCTS							
Total	32.1	—	S	S	41.5	—	21.1
Single modes	33.6	6.2	S	S	41.8	.8	S
Truck	33.6	6.2	S	S	41.9	.8	S
For-hire truck	34.8	12.4	S	S	38.5	12.8	S
Private truck	35.0	9.7	S	S	S	S	24.2
Rail	S	S	S	S	S	S	29.8
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	31.6
Pipeline	—	—	—	—	S	S	S
Multiple modes	30.3	1.1	S	S	46.6	.8	15.7
Parcel, U.S. Postal Service or courier	37.0	1.1	42.4	—	S	S	15.7
Truck and rail	S	S	S	S	S	S	32.0
Truck and water	—	—	—	—	—	—	—
Rail and water	S	S	S	S	S	S	31.6
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 32, BASE METAL IN PRIMARY OR SEMIFINISHED FORMS AND IN FINISHED BASIC SHAPES							
Total	20.6	—	20.9	—	21.3	—	20.5
Single modes	19.5	2.5	19.0	2.2	15.9	5.7	23.7
Truck	19.3	2.6	19.0	4.1	17.6	7.7	23.6
For-hire truck	19.1	7.1	19.5	8.4	20.1	7.8	14.4
Private truck	40.4	6.3	30.4	7.4	19.8	5.4	S
Rail	S	S	44.1	3.2	47.2	4.4	24.4
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	S	S	34.9	—	40.4	—	15.5
Parcel, U.S. Postal Service or courier	S	S	34.9	—	40.4	—	15.5
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	S
SCTG 33, ARTICLES OF BASE METAL							
Total	16.4	—	21.9	—	20.3	—	32.3
Single modes	19.2	4.6	25.0	8.1	28.8	10.9	44.0
Truck	19.2	4.3	23.3	7.3	28.6	9.9	45.4
For-hire truck	26.8	7.4	29.1	8.2	26.8	9.8	12.1
Private truck	20.6	5.7	26.3	6.1	S	S	S
Rail	42.9	1.6	42.7	4.2	42.3	5.2	25.9
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	49.6	.2	47.6	—	S	S	23.8
Pipeline	—	—	—	—	S	S	S
Multiple modes	42.3	4.1	40.0	1.1	S	S	19.9
Parcel, U.S. Postal Service or courier	43.4	4.1	33.8	.8	46.3	1.8	20.1
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	41.1	1.6	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 34, MACHINERY							
Total	10.9	—	15.0	—	23.3	—	23.9
Single modes	9.2	4.2	17.7	5.3	25.3	3.6	43.6
Truck	9.0	4.1	18.0	5.0	24.9	3.3	45.1
For-hire truck	12.8	3.9	19.3	5.7	25.1	3.6	9.1
Private truck	17.1	5.3	20.8	4.3	24.7	.8	S
Rail	41.6	.6	47.2	.9	47.3	1.8	23.8
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	5.5
Pipeline	—	—	—	—	S	S	S
Multiple modes	26.5	2.5	30.7	.9	48.4	2.1	8.3
Parcel, U.S. Postal Service or courier	24.7	2.4	24.6	.5	25.9	1.0	8.4
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	43.3	3.0	47.1	5.0	42.2	3.0	S
SCTG 35, ELECTRONIC AND OTHER ELECTRICAL EQUIPMENT AND COMPONENTS AND OFFICE EQUIPMENT							
Total	10.7	—	15.0	—	20.1	—	12.4
Single modes	12.8	5.6	13.6	3.1	15.9	3.3	19.1
Truck	13.8	5.9	13.9	3.2	16.2	3.2	22.1
For-hire truck	14.7	5.2	14.9	3.6	17.1	3.1	16.3
Private truck	21.2	2.3	21.7	2.6	24.6	2.1	S
Rail	44.4	.2	49.5	.6	S	S	29.6
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	21.0	1.1	26.2	.2	35.8	.4	9.6
Pipeline	—	—	—	—	S	S	S
Multiple modes	24.1	4.1	22.8	1.0	24.5	1.1	8.4
Parcel, U.S. Postal Service or courier	25.1	4.2	25.3	1.0	27.6	1.2	8.5
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	31.6
Other and unknown modes	S	S	S	S	S	S	S
SCTG 36, MOTORIZED AND OTHER VEHICLES (INCLUDING PARTS)							
Total	43.1	—	49.5	—	34.1	—	26.6
Single modes	31.7	6.7	19.5	15.0	19.6	9.5	39.6
Truck	33.1	7.2	20.2	14.4	21.5	10.2	41.4
For-hire truck	44.6	6.4	28.6	10.2	28.2	8.9	10.5
Private truck	17.4	9.5	30.9	10.0	21.5	6.9	S
Rail	S	S	S	S	S	S	28.4
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	46.7	—	36.4	—	47.9	.1	16.7
Pipeline	S	S	S	S	S	S	S
Multiple modes	S	S	S	S	S	S	15.8
Parcel, U.S. Postal Service or courier	S	S	42.3	1.4	S	S	15.8
Truck and rail	S	S	S	S	S	S	25.8
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	30.0	4.1	S	S	S	S	S

See footnote at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
SCTG 37, TRANSPORTATION EQUIPMENT, N.E.C.							
Total	25.9	—	41.2	—	S	S	20.7
Single modes	46.1	13.3	S	S	S	S	26.1
Truck	46.1	13.3	S	S	S	S	26.1
For-hire truck	S	S	S	S	S	S	28.2
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	S	S	41.5	15.5	48.9	13.2	22.1
Parcel, U.S. Postal Service or courier	S	S	41.5	15.5	48.9	13.2	22.1
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	31.8
SCTG 38, PRECISION INSTRUMENTS AND APPARATUS							
Total	35.2	—	S	S	S	S	11.2
Single modes	35.4	9.3	S	S	S	S	28.0
Truck	37.4	12.4	S	S	S	S	27.7
For-hire truck	37.3	12.0	S	S	S	S	26.6
Private truck	S	S	S	S	S	S	34.9
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	36.1	12.0	43.8	12.8	42.2	13.0	15.1
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	22.2
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	22.2
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 39, FURNITURE, MATTRESSES AND MATTRESS SUPPORTS, LAMPS, LIGHTING FITTINGS, AND ILLUMINATED SIGNS							
Total	22.9	—	12.4	—	19.9	—	25.1
Single modes	20.0	1.6	11.7	1.0	20.3	1.0	15.6
Truck	20.2	1.6	11.9	1.2	20.8	1.5	16.1
For-hire truck	14.0	7.1	16.0	7.9	23.3	8.4	10.1
Private truck	35.6	6.2	21.0	7.4	34.1	7.8	26.9
Rail	S	S	S	S	S	S	26.9
Water	S	S	S	S	S	S	31.6
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	S	S	S	S	S	S	31.6
Air (includes truck and air)	S	S	S	S	S	S	31.0
Pipeline	—	—	—	—	S	S	S
Multiple modes	16.3	.3	20.9	.3	20.2	.2	20.5
Parcel, U.S. Postal Service or courier	16.3	.3	20.9	.3	20.2	.2	20.5
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	48.0	1.1	S	S	S

See footnote at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
SCTG 40, MISCELLANEOUS MANUFACTURED PRODUCTS							
Total	13.5	—	16.5	—	23.9	—	8.1
Single modes	14.4	7.1	18.4	3.3	28.2	7.6	24.8
Truck	14.7	7.1	18.4	3.4	28.4	7.8	16.4
For-hire truck	13.0	6.2	25.0	7.7	32.2	8.2	8.8
Private truck	27.3	3.7	29.8	5.6	S	S	39.7
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	27.1	.4	26.3	.2	38.8	.6	11.1
Pipeline	—	—	—	—	S	S	S
Multiple modes	35.7	8.0	42.2	2.9	45.1	7.0	7.4
Parcel, U.S. Postal Service or courier	36.3	7.6	43.7	2.9	48.4	7.1	7.4
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	49.1	3.4	42.1	2.1	S	S	26.5
SCTG 41, WASTE AND SCRAP							
Total	S	S	S	S	45.3	—	45.3
Single modes	S	S	S	S	45.3	10.5	39.1
Truck	S	S	S	S	S	S	41.6
For-hire truck	S	S	S	S	S	S	S
Private truck	S	S	S	S	S	S	28.7
Rail	35.6	6.6	35.3	8.2	43.1	10.1	26.1
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	31.6
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	31.6
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—
SCTG 43, MIXED FREIGHT							
Total	6.8	—	9.7	—	8.5	—	12.7
Single modes	5.9	2.0	10.2	1.7	7.2	2.9	16.3
Truck	5.9	2.0	10.2	1.7	7.1	2.9	17.2
For-hire truck	9.7	3.8	21.0	4.1	16.2	4.1	30.5
Private truck	10.2	3.9	13.1	4.0	9.5	3.7	13.7
Rail	—	—	—	—	—	—	—
Water	S	S	S	S	S	S	31.6
Shallow draft	—	—	—	—	—	—	—
Great Lakes	S	S	S	S	S	S	31.6
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	48.9	—	S	S	S	S	24.2
Pipeline	—	—	—	—	S	S	S
Multiple modes	31.0	2.2	30.2	.4	32.7	3.1	8.6
Parcel, U.S. Postal Service or courier	33.3	2.2	37.3	.4	40.6	2.8	8.6
Truck and rail	S	S	S	S	S	S	29.5
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	
COMMODITY UNKNOWN							
Total	41.6	—	46.6	—	48.3	—	35.6
Single modes	40.7	9.3	47.8	7.7	S	S	28.9
Truck	43.0	10.6	47.8	7.7	S	S	31.6
For-hire truck	44.1	14.1	48.0	16.4	45.7	13.7	22.0
Private truck	S	S	S	S	S	S	28.0
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	29.8
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	39.7
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	39.7
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S

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

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

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

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

State of destination	Value		Tons		Ton-miles	
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage
Total	5.2	—	9.1	—	14.0	—
NEW ENGLAND STATES						
Connecticut	14.5	—	15.3	—	15.7	.1
Maine	26.9	—	34.9	—	38.9	.2
Massachusetts	23.8	.3	23.3	—	23.1	.3
New Hampshire	33.5	—	33.5	—	34.5	—
Rhode Island	32.6	—	S	S	S	S
Vermont	33.2	—	S	S	S	S
MIDDLE ATLANTIC STATES						
New Jersey	18.9	.3	15.1	—	15.6	.3
New York	20.4	.3	43.9	.5	S	S
Pennsylvania	12.5	.4	19.9	.2	19.6	.5
EAST NORTH CENTRAL STATES						
Illinois	7.1	.8	29.0	2.3	22.2	1.7
Indiana	11.3	.3	15.0	.2	17.6	.3
Michigan	21.8	.9	13.7	.4	13.2	.5
Ohio	10.0	.3	28.8	1.2	31.4	2.2
Wisconsin	5.3	1.8	12.5	3.7	14.2	1.3
WEST NORTH CENTRAL STATES						
Iowa	11.3	.3	26.4	.4	29.6	.5
Kansas	18.4	.1	34.1	.2	35.3	.7
Minnesota	11.3	.5	19.3	.9	25.3	.9
Missouri	9.6	.2	41.0	.3	39.7	.2
Nebraska	13.9	.1	S	S	S	S
North Dakota	12.1	—	16.8	—	17.7	.2
South Dakota	29.3	.1	25.1	—	27.1	—
SOUTH ATLANTIC STATES						
Delaware	25.3	—	35.3	—	37.5	—
District of Columbia	34.6	—	S	S	S	S
Florida	18.4	.3	30.0	.2	30.2	.9
Georgia	26.8	.3	20.3	.3	21.9	1.0
Maryland	14.0	.1	22.1	—	22.4	.1
North Carolina	18.0	.2	24.6	.2	27.4	.5
South Carolina	11.4	—	19.9	—	19.1	.1
Virginia	21.8	.2	S	S	S	S
West Virginia	29.7	—	S	S	S	S
EAST SOUTH CENTRAL STATES						
Alabama	12.1	—	25.1	.1	26.8	.4
Kentucky	18.3	.1	36.5	.2	29.7	.1
Mississippi	42.6	.1	S	S	S	S
Tennessee	11.7	.2	13.2	.1	14.0	.2
WEST SOUTH CENTRAL STATES						
Arkansas	17.1	—	20.5	—	20.7	—
Louisiana	38.9	.4	S	S	S	S
Oklahoma	17.5	—	21.0	—	20.6	—
Texas	17.1	.4	15.2	.2	15.2	1.1
MOUNTAIN STATES						
Arizona	36.8	.2	49.1	—	49.8	.4
Colorado	22.1	.2	21.5	—	23.2	.3
Idaho	23.9	—	S	S	S	S
Montana	S	S	24.0	—	25.5	—
Nevada	14.0	—	22.6	—	23.0	—
New Mexico	31.4	—	S	S	S	S
Utah	29.8	.1	19.8	—	20.5	.1
Wyoming	42.6	—	S	S	S	S
PACIFIC STATES						
Alaska	31.1	—	S	S	S	S
California	11.5	.4	11.0	1.1	10.9	1.3
Hawaii	S	—	S	S	S	S
Oregon	36.4	.1	24.4	—	25.3	.5
Washington	41.3	.3	29.5	—	29.7	.6

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

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

State of origin	Value		Tons		Ton-miles	
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage
Total	5.6	–	7.0	–	9.6	–
NEW ENGLAND STATES						
Connecticut	28.3	.1	32.3	–	32.1	–
Maine	22.9	–	23.6	–	26.6	.2
Massachusetts	28.4	.2	21.8	–	21.9	–
New Hampshire	19.0	–	32.6	–	31.4	–
Rhode Island	24.6	–	S	S	S	S
Vermont	16.4	–	S	S	S	S
MIDDLE ATLANTIC STATES						
New Jersey	25.7	.3	37.4	.1	39.4	.3
New York	24.7	.4	27.6	.1	30.1	.4
Pennsylvania	13.7	.3	32.7	.3	33.7	1.1
EAST NORTH CENTRAL STATES						
Illinois	10.7	1.2	21.9	2.3	24.1	1.4
Indiana	13.7	.4	37.4	.7	35.6	.4
Michigan	14.3	.5	25.1	.5	33.7	1.3
Ohio	47.5	2.8	32.2	.5	30.4	.7
Wisconsin	5.3	2.0	12.5	3.8	14.2	1.0
WEST NORTH CENTRAL STATES						
Iowa	12.9	.4	26.2	1.0	22.6	.7
Kansas	13.7	–	31.5	–	32.0	.1
Minnesota	19.0	1.0	24.6	1.0	23.4	1.0
Missouri	15.8	.2	41.9	.3	38.6	.6
Nebraska	16.3	–	37.0	–	37.6	.2
North Dakota	29.5	–	46.1	.4	44.6	.5
South Dakota	40.5	.2	32.7	–	28.3	–
SOUTH ATLANTIC STATES						
Delaware	28.3	–	S	S	S	S
District of Columbia	S	S	S	S	S	S
Florida	16.4	.1	30.8	–	31.0	.2
Georgia	18.5	.2	19.1	.1	19.3	.3
Maryland	33.3	.1	25.8	–	27.9	–
North Carolina	13.3	.1	18.2	–	18.1	.1
South Carolina	18.0	.1	11.5	–	12.1	.1
Virginia	13.6	–	31.9	–	32.7	.1
West Virginia	13.5	–	S	S	S	S
EAST SOUTH CENTRAL STATES						
Alabama	20.1	.1	43.6	.3	44.4	1.0
Kentucky	19.1	.2	S	S	S	S
Mississippi	16.1	–	19.9	–	20.2	–
Tennessee	21.5	.4	26.3	–	28.8	.2
WEST SOUTH CENTRAL STATES						
Arkansas	12.2	–	20.2	–	20.7	.2
Louisiana	24.0	–	39.4	.4	40.8	1.2
Oklahoma	17.6	–	20.4	–	20.7	.1
Texas	13.4	.2	40.5	.6	41.7	1.4
MOUNTAIN STATES						
Arizona	20.0	–	40.9	–	41.0	.1
Colorado	43.1	.1	23.6	–	23.4	–
Idaho	16.9	–	14.7	–	15.5	.2
Montana	30.3	–	38.9	2.4	37.9	4.5
Nevada	37.7	–	39.3	–	39.1	–
New Mexico	31.0	–	35.6	–	35.5	–
Utah	21.3	–	S	S	S	S
Wyoming	24.8	–	21.6	2.1	21.5	6.6
PACIFIC STATES						
Alaska	S	S	S	S	S	S
California	22.8	.7	16.3	–	16.7	.5
Hawaii	S	S	S	S	S	S
Oregon	32.5	.1	45.5	.1	46.6	.6
Washington	11.8	–	49.3	.1	45.9	.8

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

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

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

Mode of transportation	Value			Tons			Ton-miles			Average miles per shipment		
	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change
	2002	1997		2002	1997		2002	1997		2002	1997	
Total	5.2	3.8	7.9	9.1	12.7	15.4	14.0	5.4	22.8	9.5	4.7	12.6
Single modes	3.9	4.1	6.7	9.1	13.1	15.2	15.1	5.1	24.1	8.0	11.0	13.5
Truck	4.2	4.5	7.3	11.3	14.2	14.7	7.8	5.3	9.9	8.3	10.2	14.3
Rail	26.5	12.3	31.8	25.0	13.3	72.7	15.5	12.1	58.9	7.7	6.4	11.0
Water	S	31.7	S	S	34.7	S	S	S	S	33.3	31.3	37.2
Air (includes truck and air)	15.7	13.2	13.5	41.6	17.9	44.4	37.8	19.0	49.1	9.0	7.7	11.6
Pipeline	S	42.4	S	S	44.8	S	S	S	S	S	S	S
Multiple modes	18.6	6.4	29.9	13.9	14.6	39.2	16.9	8.8	44.6	4.2	3.8	6.0
Parcel, U.S. Postal Service or courier ..	18.3	6.9	23.3	16.8	6.8	20.3	20.0	7.0	26.8	4.4	3.8	6.1
Truck and rail	S	13.2	S	24.2	34.0	121.9	25.5	14.6	96.9	6.7	11.3	13.9
All other multiple modes	45.9	44.9	104.2	45.6	49.3	61.4	S	S	S	32.8	24.1	14.1
Other and unknown modes ...	23.4	12.0	35.5	36.9	16.1	114.1	30.2	35.6	49.0	S	20.6	S

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

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

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

SCTG code	Commodity description	Value			Tons			Ton-miles			Average miles per shipment		
		Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change
		2002	1997		2002	1997		2002	1997		2002	1997	
	Total	5.2	3.8	7.9	9.1	12.7	15.4	14.0	5.4	22.8	9.5	4.7	12.6
01-05	Agricultural products and fish	16.0	8.4	21.3	33.7	12.9	82.1	S	21.9	S	35.2	25.4	26.6
06-09	Grains, alcohol, and tobacco products	10.0	3.4	13.1	17.6	7.5	23.9	23.3	10.8	28.8	30.3	24.1	28.5
10-14	Stones, nonmetallic minerals, and metallic ores	25.4	16.8	30.8	11.5	27.8	22.4	30.9	26.3	125.4	37.4	22.2	96.1
15-19	Coal and petroleum products	24.6	36.2	17.5	24.9	35.1	16.5	27.7	32.4	82.7	35.6	16.9	127.0
20-24	Basic chemicals, chemical, and pharmaceutical products	12.2	8.3	16.0	30.2	11.1	68.6	24.6	11.5	65.4	11.5	13.9	12.4
25-30	Logs, wood products, and textile and leather	8.1	6.2	12.6	10.9	11.6	13.1	10.0	14.6	12.5	6.5	4.8	9.4
31-34	Base metal and machinery ..	9.5	4.2	9.6	49.9	11.9	44.7	10.8	15.7	16.2	18.5	11.0	16.1
35-38	Electronic, motorized vehicles, and precision instruments	24.2	11.1	30.5	39.5	13.1	69.8	20.7	15.7	33.5	15.0	15.3	21.7
39-43	Furniture, mixed freight and misc. manufactured prod. ..	5.8	6.4	20.7	15.1	10.7	27.9	10.8	15.1	21.5	7.5	7.7	10.9
--	Commodity unknown	41.6	35.2	49.4	46.6	S	S	48.3	39.4	21.9	35.6	22.9	20.0

- 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.

