TranStats

The Intermodal Transportation Data

Bureau of Transportation Statistics

Getting Started with TranStats

Bureau of Transportation Statistics
DEPARTMENT OF TRANSPORTATION

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Overview

What is TranStats?

TranStats is a new website for transportation researchers and analysts aimed at providing "one-stop shopping" for transportation data. The premise is fairly simple: By reducing the time needed to gather data, more time is made available for analysis. And easy linkages across many data sets can provide new insights. Ultimately, this should result in more timely and more informed decisions, and a better transportation system.

How do you access TranStats?

Use the following URL:

`http://www.bts.gov/transtats`

What can you do with TranStats?

Data Discovery

- Locate data tables via transportation mode, subject, agency, or content keywords.
- Get information about the data, including database names, database profiles, data tables included in each database and data table profiles, including data frequency and most recent updates for each data table
- Retrieve support tables of coding schemes for category fields.
- Obtain data source contact information as well as BTS support contact information.

Data Retrieval

- Retrieve data in the comma-delimited format from a variety of intermodal data systems.
- Download lookup tables for categorical variables to go with the data.
- Dynamically filter data based on geography and time.
- Select specific fields to download from a data table.

Interactive Analysis

- Perform interactive analysis for knowledge discovery.
- Dynamically select dependent variables, category fields, summary statistics and use time and geography filters.
- Produce the results both in tables, charts, and, if applicable, maps.
- Print or download the analysis results for reports or further studies.

Metadata

Metadata is data about data. TranStats provides online metadata for all databases either resided on its website or linked.

What does metadata do

Metadata describes the data you are interested in and help you decide whether the data is appropriate, and if it is, which data table or which fields within a table are relevant.

For coded fields, such as airports, you can further drill down to find out what each code represents in the data. In the case of airports, the codes are the same as those used by the industry but in other instances, the codes may be arbitrary.

How do you use metadata

To use the metadata in TranStats, follow these steps:

1. From TranStats homepage, locate the mode, subject, or agency.
   TranStats categorizes data by a combination of modes (that is, transportation methods), subjects, and agencies that provide the data. You can find the categories either in the **Data Library** or under **Data Finder** on the sidebar.
2. Click the selected mode, subject, or agency.

Figure 2.1. Data Library on the Homepage

or use the sidebar when you are on other pages.

Figure 2.2. Data Finder on the Sidebar

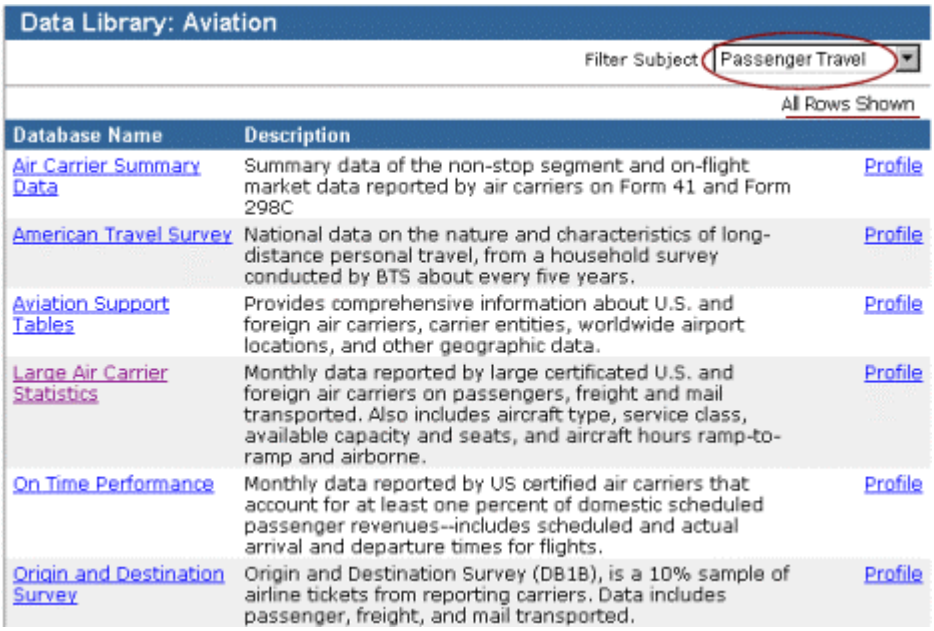
All databases in the selected mode, subject, or agency are displayed, as shown below:

Figure 2.3. All Databases Relevant to Aviation

In TranStats, data are grouped in databases. Each database contains one or more related data tables. The short description helps you identify the data you are trying to locate.

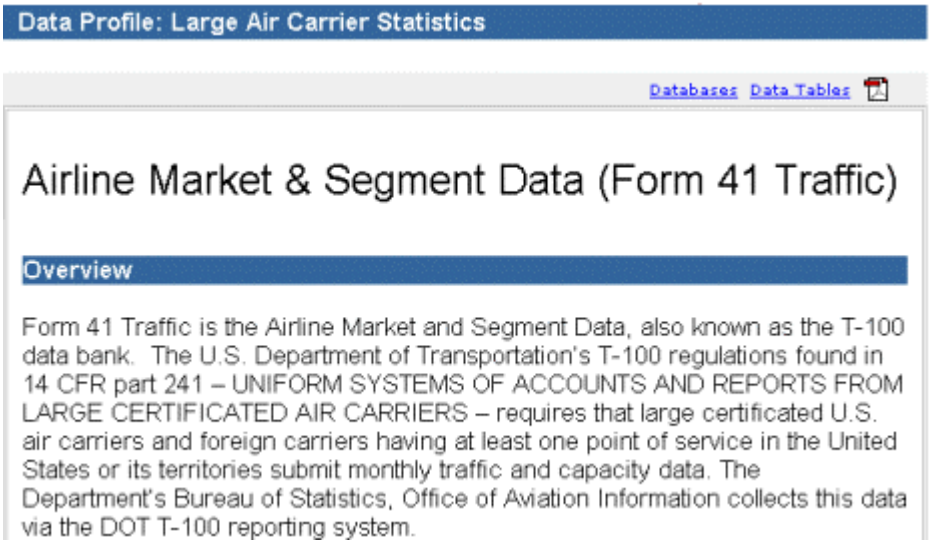
3. To further narrow down the database list, select a specific subject from the **Filter Subject** dropdown list. For example, if you are interested in **Passenger Travel**, just select it and you obtain a focus list as shown below:

Figure 2.4. Databases Relevant to Safety and Aviation



4. To find more information about a particular database and the tables within it, click **Profile.** The following shows the database profile for **Large Air Carrier Statistics,** which is also known as Form 41 Traffic Data:

Figure 2.5. Database Profile



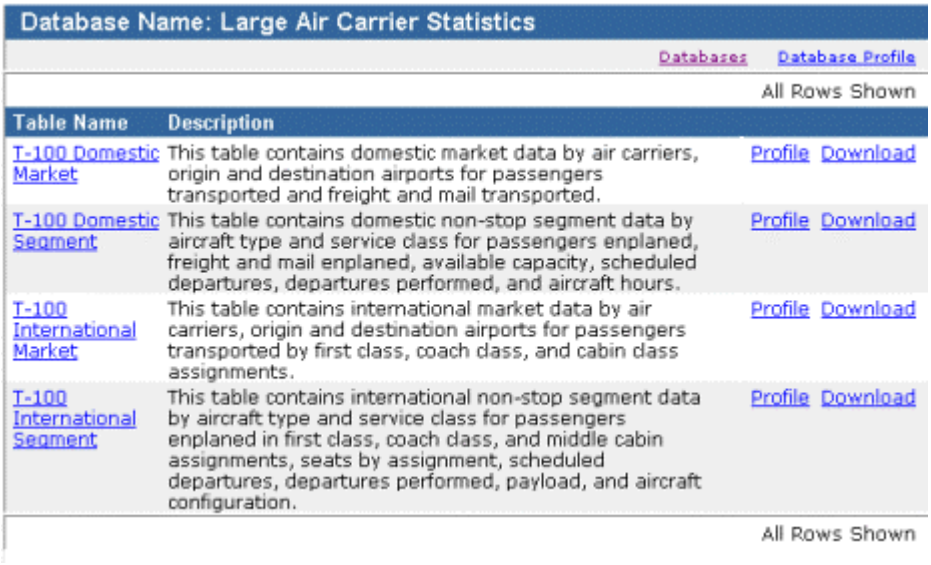
You can obtain a PDF file by clicking the PDF icon on the top and print out hard copies of part or the whole of the profile.

To read it online, use the sidebar navigation.

The document contains hypertext links that allow you to go to the data tables, summary tables, and various related websites. It also provides contact information for the data provider as well as BTS customer service.

5. If you know which database you need, click the database name and you will have access to all the data tables within the database. For example, if you click **Large Air Carrier Statistics,** the following screen appears:

Figure 2.6. All Data Tables in Large Air Carrier Statistics



Database Name: Large Air Carrier Statistics

Databases | Database Profile

All Rows Shown

Table Name	Description	
T-100 Domestic Market	This table contains domestic market data by air carriers, origin and destination airports for passengers transported and freight and mail transported.	Profile Download
T-100 Domestic Segment	This table contains domestic non-stop segment data by aircraft type and service class for passengers enplaned, freight and mail enplaned, available capacity, scheduled departures, departures performed, and aircraft hours.	Profile Download
T-100 International Market	This table contains international market data by air carriers, origin and destination airports for passengers transported by first class, coach class, and cabin class assignments.	Profile Download
T-100 International Segment	This table contains international non-stop segment data by aircraft type and service class for passengers enplaned in first class, coach class, and middle cabin assignments, seats by assignment, scheduled departures, departures performed, payload, and aircraft configuration.	Profile Download

All Rows Shown

TranStats provides easy navigation. You can come to this page by clicking **Data Tables** on the **Database Profile** page; similarly you can view the **Database Profile** or **Databases** pages simply by clicking the links right under the header bar.

6. To obtain the data table profile, which includes data frequency and latest update information, click **Profile** for the data table. For example, clicking **Profile** for **T-100 Domestic Market** leads to the following page:

Figure 2.7. Data Table Profile

Table Summary: T-100 Domestic Market

Databases | Database Profile | Data Tables | Table Contents

Property	Description
Name	T-100 Domestic Market
Description	This file contains data reported by U.S. carriers operating between airports located within the boundaries of the United States and its territories. These data are often referred to as either Market or On-Flight Origin-Destination (O&D) records. The data fields contain information on passengers, freight and/or mail enplaned at the origin airport of the flight, and deplaned at the destination airport of the flight.
Records	1,739,907
Fields	26
First Year	1990
Last Year	2002
Frequency	Monthly
Last Data Update	March

7. To view what data fields are included in a table, click the table name. You can also click Table Contents on the Table Profile page shown above. The **Table Contents**

page for **T-100 Domestic Market**, including a description of each field, is displayed as follows:

Figure 2.8. All Fields in T-100 Domestic Market Table

Table Name : T-100 Domestic Market

Databases | Database Profile | Data Tables | Table Profile

Field Name	Description	
Carrier	Carrier Code	Analysis
CarrierEntity	Carrier Entity Code	Analysis
CarrierGroup	Carrier Group Code	Analysis
CarrierName	Carrier Name	
Class	Service Class	Analysis
Dest	Destination Airport	Analysis
DestCityName	Destination City	
DestCityNum	Destination City Code	Analysis
DestState	Destination State Code	Analysis
DestStateFips	Destination State FIPS	Analysis
DestStateName	Destination Airport, State Name	
DestWac	Destination Airport, World Area Code	Analysis
Distance	Distance (miles)	Analysis

The fields that are categorical (or discrete) variables, such as **Carrier** or **Class**, are shown as hypertext links to their coding schemes.

8. To find out what each code represents for a specific categorical variable, click on the field name; for example, you will find out codes for all service classes if you click **Class.** The resulting lookup table (or support table) is shown below:

Figure 2.9. Lookup Table for Service Class in T-100 Domestic Market

Table Name : T-100 Domestic Market

Field: Service Class

Format results for printing | Download Lookup Table | Databases | Data Tables | Table Contents

All Rows Shown

Code	Description
F	Scheduled Passenger/Cargo Service
G	Scheduled All Cargo Service
L	Non-Scheduled Civilian Passenger Service
N	Military Passenger Service
P	Non-Scheduled Civilian All Cargo Service
R	Unknown
X	Unknown Code Description

All Rows Shown

You will need this information when you interpret your Summary Analysis or construct your queries for Distributed Computing. To download the lookup table, click **Download Lookup Table**; to produce a hard copy, click **Format results for printing** and print the results.

Data Retrieval

TranStats allows you to retrieve data in a flexible way. You can selectively download data in the comma-delimited format from the Web server or download summarized data from interactive analyses.

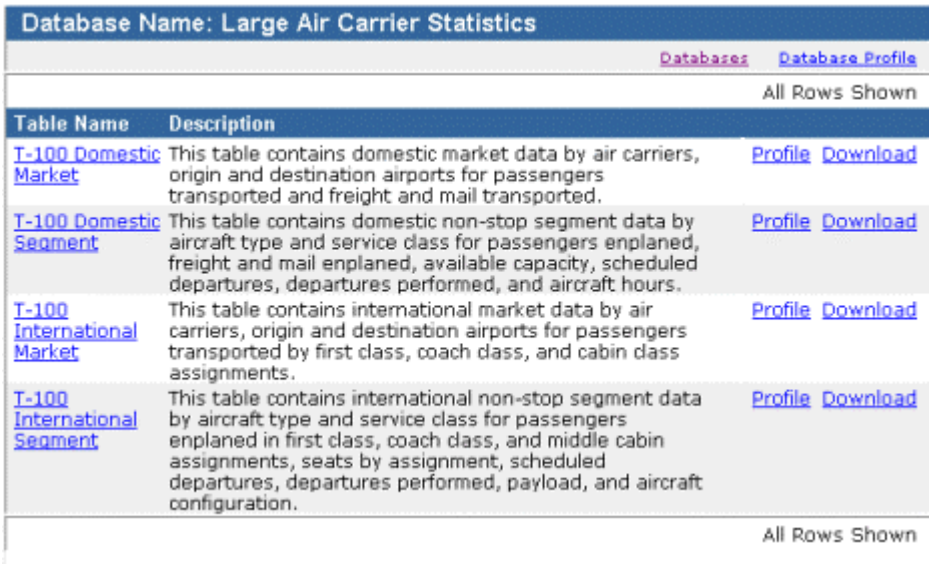
How to down load data from TranStats Web server

The basic download function is available on data table basis. Determine the table, fields, time period and, if applicable, geographical location that are relevant to your study.

Downloading data from the Web site

To download data, you must be on the **Data Tables** screen, for example, the screen displaying all tables available within the **Large Air Carrier Statistics** database as shown below:

Figure 3. 1 Start Download



Database Name: Large Air Carrier Statistics

Databases | Database Profile

All Rows Shown

Table Name	Description		
T-100 Domestic Market	This table contains domestic market data by air carriers, origin and destination airports for passengers transported and freight and mail transported.	Profile	Download
T-100 Domestic Segment	This table contains domestic non-stop segment data by aircraft type and service class for passengers enplaned, freight and mail enplaned, available capacity, scheduled departures, departures performed, and aircraft hours.	Profile	Download
T-100 International Market	This table contains international market data by air carriers, origin and destination airports for passengers transported by first class, coach class, and cabin class assignments.	Profile	Download
T-100 International Segment	This table contains international non-stop segment data by aircraft type and service class for passengers enplaned in first class, coach class, and middle cabin assignments, seats by assignment, scheduled departures, departures performed, payload, and aircraft configuration.	Profile	Download

All Rows Shown

Use the following steps to download a table:

1. Locate the table that is relevant to your study. For example, **T100-Domestic Market**.
2. Click **Download** at the end of the row.
   The following figure shows all the fields in T-100 Domestic Market for you to specify what to download.

Figure 3.2 Download Data from T-100 Domestic Market

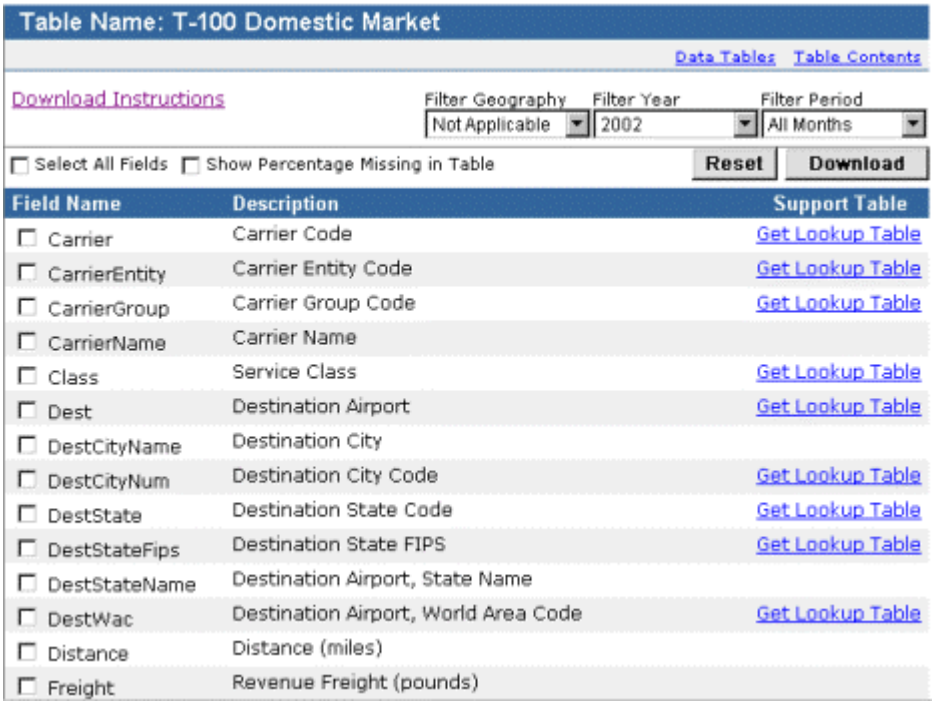


Table Name: T-100 Domestic Market

Data Tables | Table Contents

Download Instructions

Filter Geography: Not Applicable | Filter Year: 2002 | Filter Period: All Months

☐ Select All Fields ☐ Show Percentage Missing in Table | Reset | Download

Field Name	Description	Support Table
☐ Carrier	Carrier Code	Get Lookup Table
☐ CarrierEntity	Carrier Entity Code	Get Lookup Table
☐ CarrierGroup	Carrier Group Code	Get Lookup Table
☐ CarrierName	Carrier Name	
☐ Class	Service Class	Get Lookup Table
☐ Dest	Destination Airport	Get Lookup Table
☐ DestCityName	Destination City	
☐ DestCityNum	Destination City Code	Get Lookup Table
☐ DestState	Destination State Code	Get Lookup Table
☐ DestStateFips	Destination State FIPS	Get Lookup Table
☐ DestStateName	Destination Airport, State Name	
☐ DestWac	Destination Airport, World Area Code	Get Lookup Table
☐ Distance	Distance (miles)	
☐ Freight	Revenue Freight (pounds)	

3. To see data density, click Show Percentage Missing in Table. The percentage displayed for each field refers to the null-percentage of that field in the entire table.

Figure 3.3 Obtain Missing Data Percentage

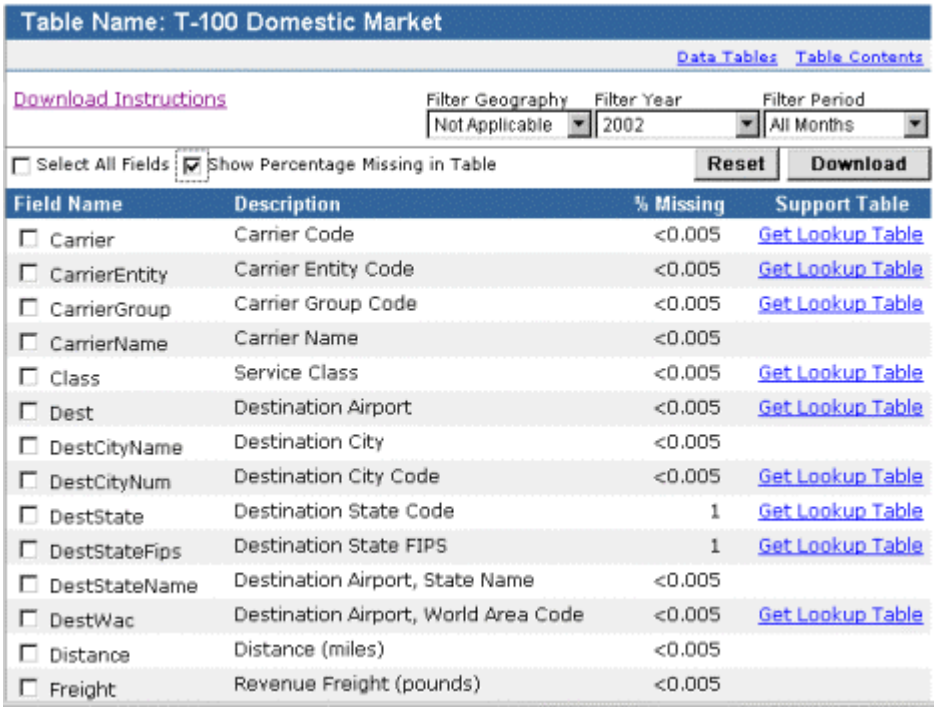


Table Name: T-100 Domestic Market

Data Tables | Table Contents

Download Instructions

Filter Geography: Not Applicable | Filter Year: 2002 | Filter Period: All Months

☐ Select All Fields ☑ Show Percentage Missing in Table | Reset | Download

Field Name	Description	% Missing	Support Table
☐ Carrier	Carrier Code	<0.005	Get Lookup Table
☐ CarrierEntity	Carrier Entity Code	<0.005	Get Lookup Table
☐ CarrierGroup	Carrier Group Code	<0.005	Get Lookup Table
☐ CarrierName	Carrier Name	<0.005	
☐ Class	Service Class	<0.005	Get Lookup Table
☐ Dest	Destination Airport	<0.005	Get Lookup Table
☐ DestCityName	Destination City	<0.005	
☐ DestCityNum	Destination City Code	<0.005	Get Lookup Table
☐ DestState	Destination State Code	1	Get Lookup Table
☐ DestStateFips	Destination State FIPS	1	Get Lookup Table
☐ DestStateName	Destination Airport, State Name	<0.005	
☐ DestWac	Destination Airport, World Area Code	<0.005	Get Lookup Table
☐ Distance	Distance (miles)	<0.005	
☐ Freight	Revenue Freight (pounds)	<0.005	

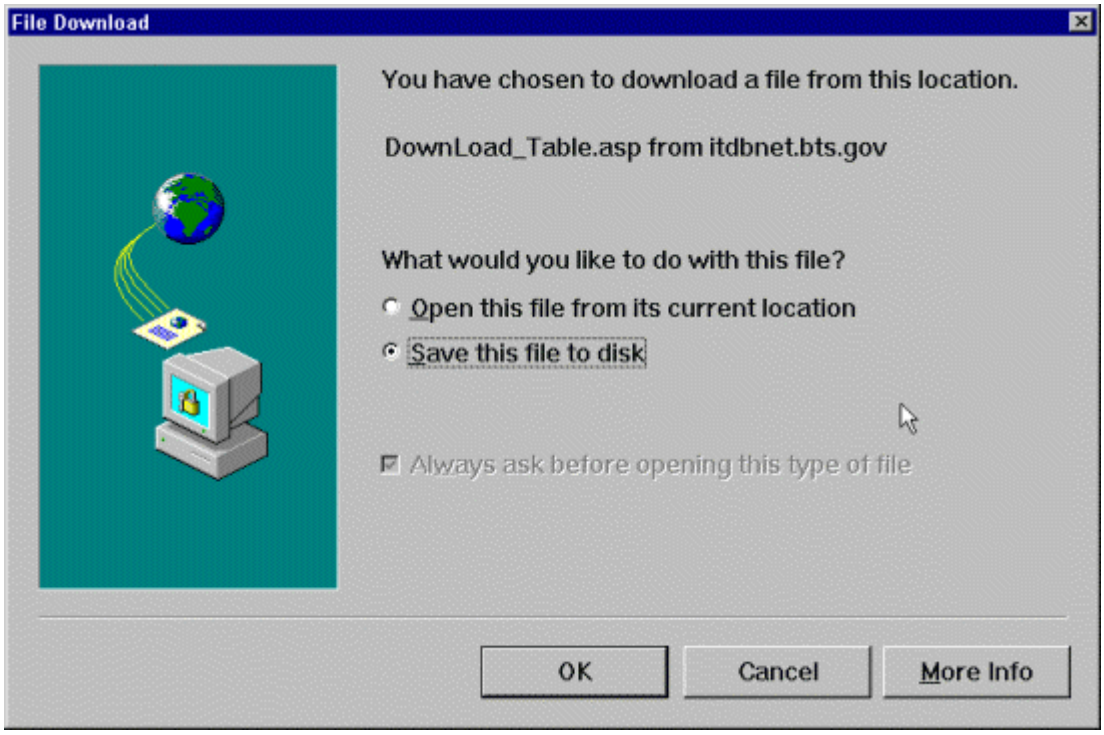
This table has very few missing data.

4. Specify **Year** and **Period** using the drop-down lists. **Period** can either be one quarter (or all quarters) or one month (or all months), whichever is appropriate to the data; for this example, keep the default, which is All Quarters of the year 2000.
5. Specify Geography if the drop-down list is populated. You can select a country (or all countries) or a state (or all states) whichever is appropriate to the data.
6. Select all the fields relevant to your study.

Note: For very large tables, TranStats does now allow you to select All Months or All Fields to reduce network traffic. If you need all data from those tables, contact BTS customer service.

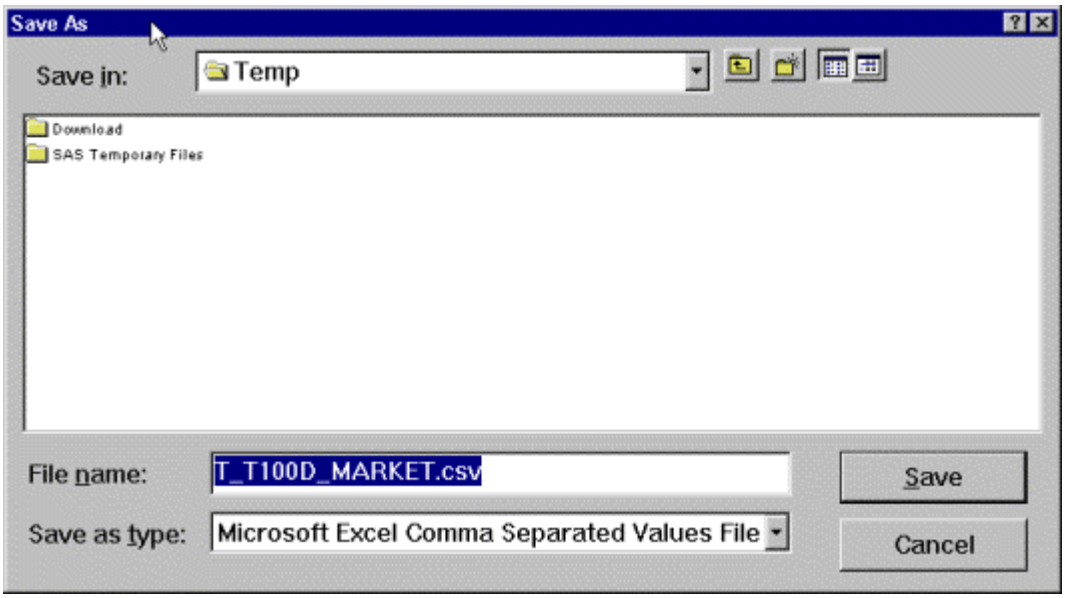
7. To retrieve lookup tables, click Get Lookup Table on the right side. For example, you might want to get all the codes for **Carrier**.
   Lookup tables are downloaded separately.
8. When you have make all the selections and downloaded all the lookup tables you need, click **Download** to download the selected data.
9. The Windows **File Download** dialog box appears.

Figure 3.4 File Download



10. Select **Save this file to disk** and click **OK**.
    The Save As dialog box appears as shown in the following figure.

Figure 3.5 Save As Dialog Box



The default filename should have an extension of **csv**. With this extension, you will be able to open it directly in MS Excel.

Note: If the default name appears as something else, you may need to download the latest patch for your browser. Meanwhile, manually change the extension to csv as the saved file will be in that format (comma-delimited).

11. Select a folder on your workstation and click **Save**.
12. When Download Complete is displayed, click **Close**.

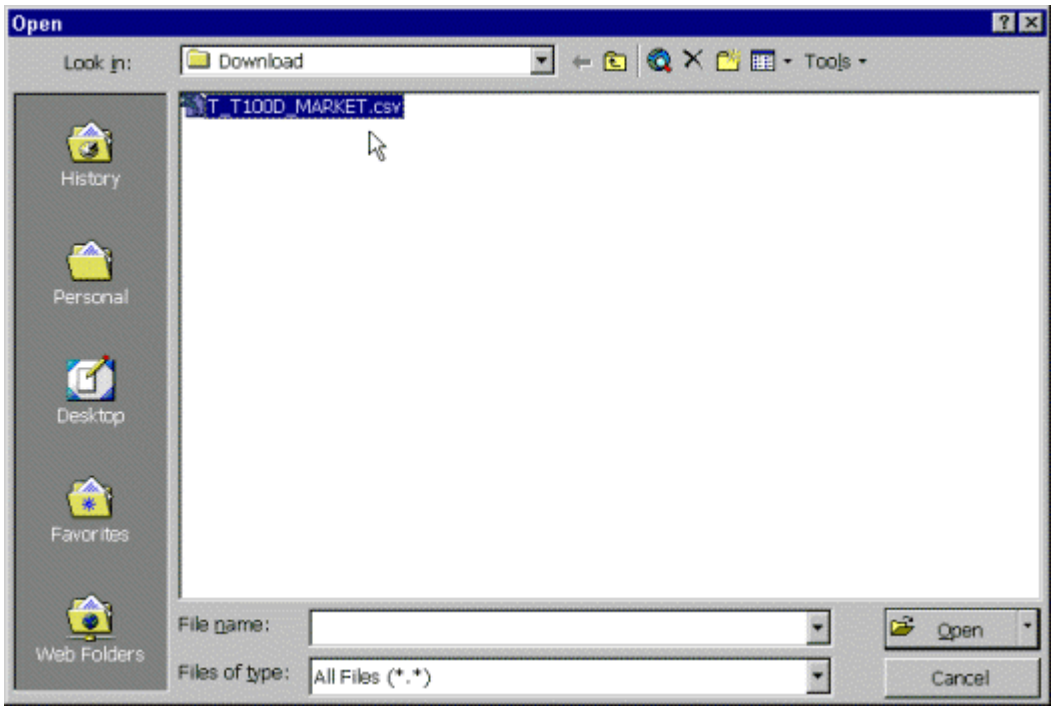
Opening the downloaded table in your favorite application

The file you get is in the comma-delimited format supported by most applications that work with data. If you have saved the file with an csv extension, you can double-click the file and open it directly in MS Excel. After opening it, you still may need to adjust the column widths and perform special formatting for some data such as dates. See relevant steps below.

If you have saved the file in any other extension or you have an earlier version of MS Excel that does not support csv as a default file type, follow these steps:

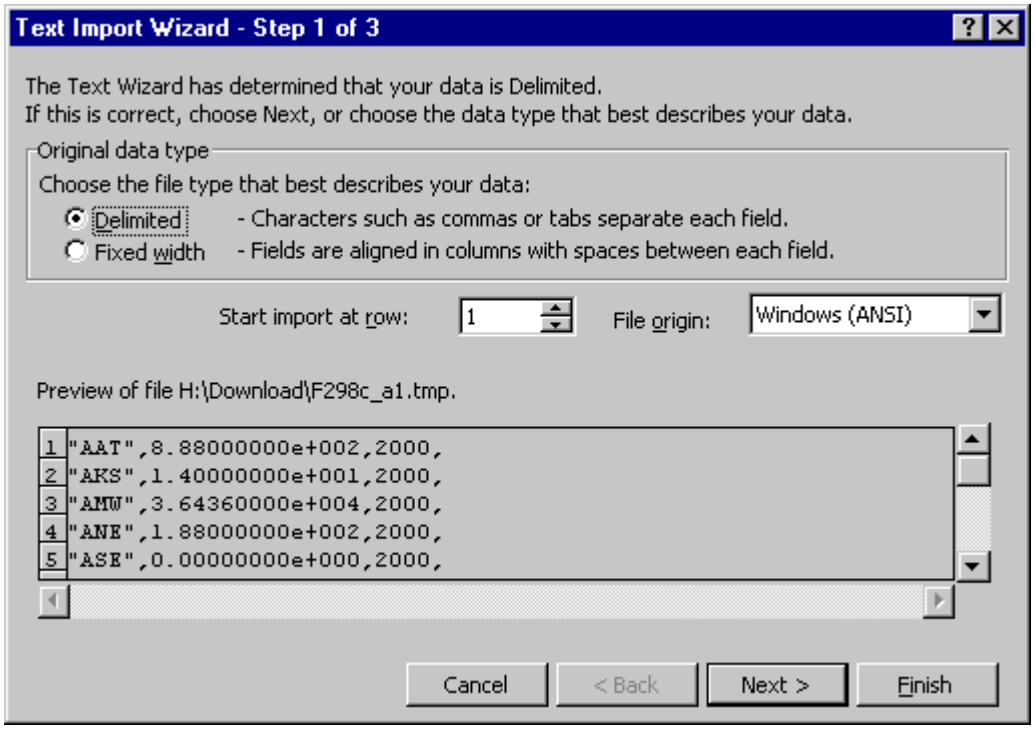
1. From the menu bar, select **File > Open**.
   The **Open** dialog box appears.
2. In the **Look in** field, specify the folder where you have downloaded the file,
3. In the **File of type** field, change the default to **All Files (*.*)**.
   The Open dialog box displays all the files in the specified folder, as shown in the following figure.

Figure 3.6 Open the Downloaded File



4. Select the file you have downloaded, in this case *T_T100_MARKET.csv* and click **Open**.
Text Import Wizard – Step 1 of 3 appears.

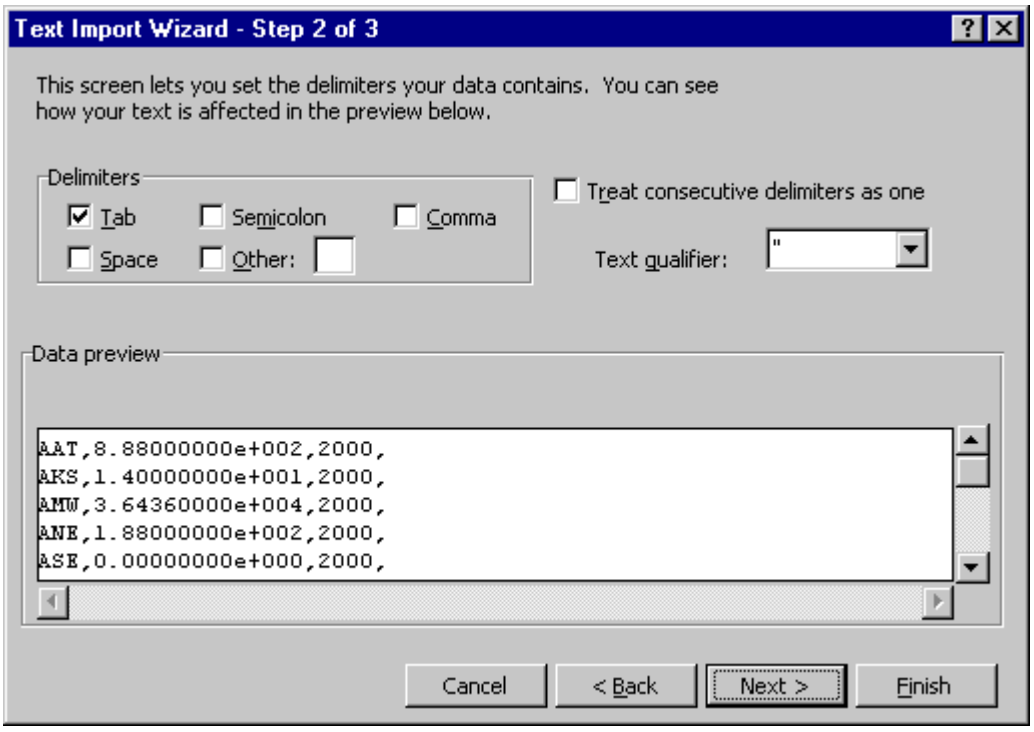
Figure 3.7 Text Import Wizard (Excel)



5. Select **Delimited** as the original data type if it is not the default and click **Next**.

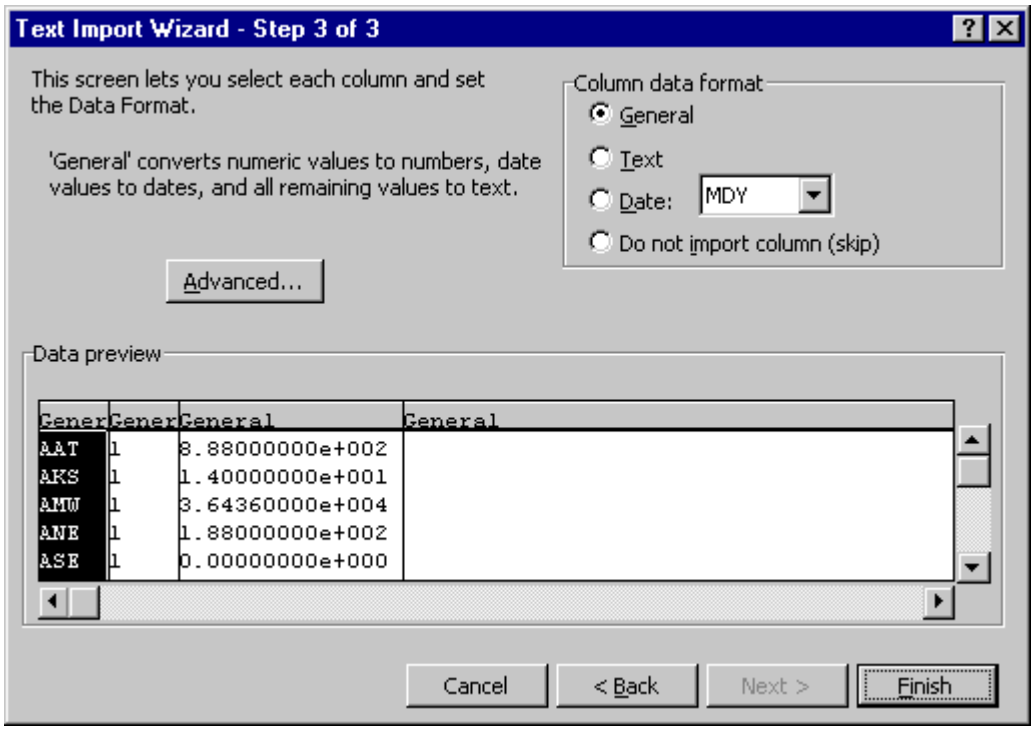
Text Import Wizard – Step 2 of 3 appears.

Figure 3.8 Text Import Wizard (Excel) – 2



6. Select **Comma** and deselect all other check boxes in the window.
   The window displays a data preview for you to check for errors in how columns are separated.
7. Click **Next**.
   Text Import Wizard – Step 3 of 3 appears.

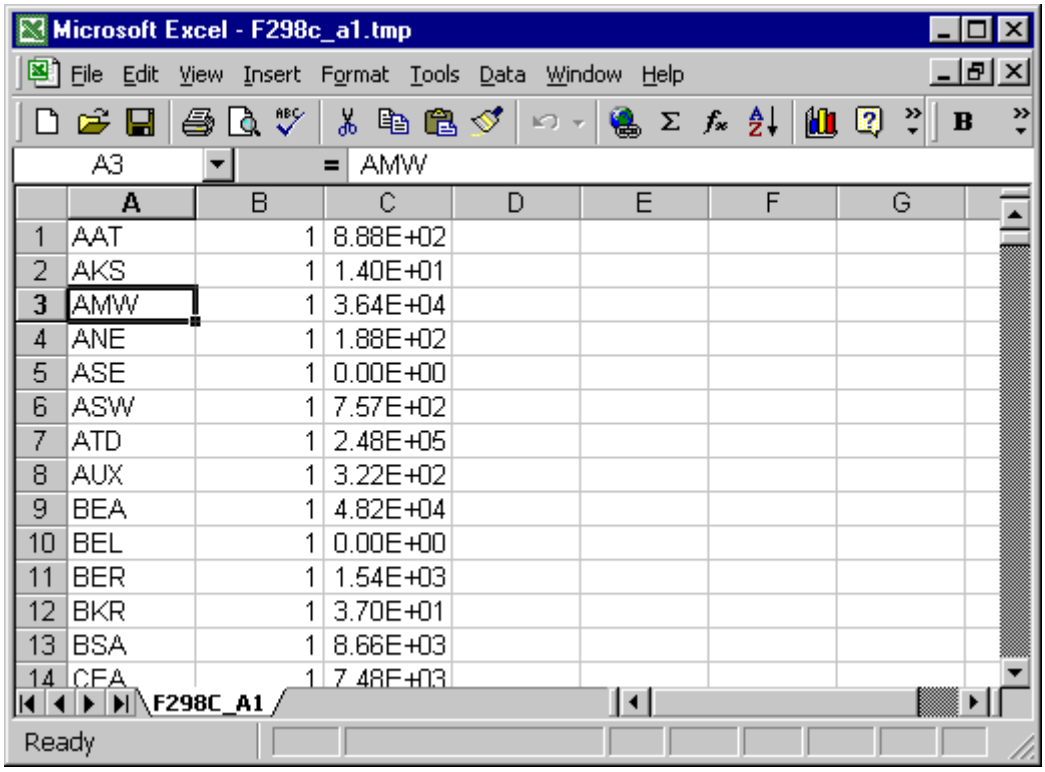
Figure 3.9 Text Import Wizard (Excel) - 3



This window allows you to format each column. For Microsoft Excel, the **General** format is adequate.

8. Click **Finish**. The downloaded data is imported into a Microsoft Excel spreadsheet.

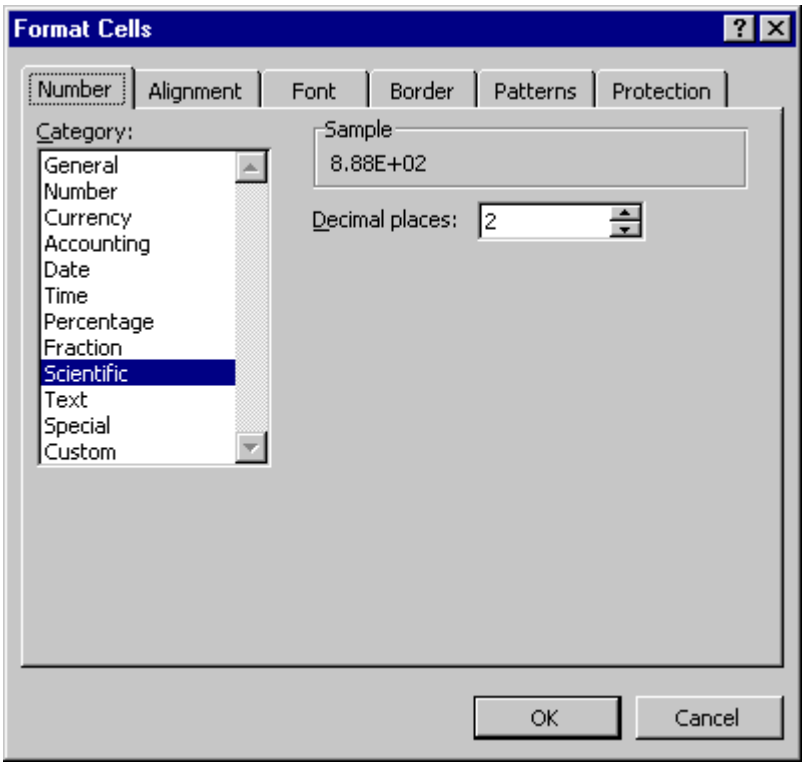
Figure 3.10 Data in Excel Spreadsheet



In the previous figure, the third column is displayed in scientific notation (for example, *3.64E+04*). Sometimes, it is because the column width is too small; simply dragging the right border of the column to enlarge it and the numbers may be displayed in full. Other times, you may need to change the numeric format.

9. To change the numeric values from the scientific format to a format easier to read, highlight the column(s) and select from the menu bar **Format > Cells**.
The Format Cell window appears.

Figure 3.11 Change Column Format in Excel



Note: Changing the format of the numeric columns does not change the values in the data.

Summary Analysis

TranStats provides most frequently used summary analyses of its data. Use these analyses to explore the data and discover fields of interest.

What summary analyses are available

Summary analysis is a descriptive analysis that yields detailed information about the distribution of continuous variables or counts, for example, ton-miles or number of passengers. Those variables are dependent variables.

TranStats provides Table Analysis, Time Series, and Crossties. You can display results in tables, charts, or maps where mapping information is available.

How do you work with summary analysis

Summary analysis in TranStats is table-based though some cross-table variables can be used to calculate rates and it is highly interactive. To start interactive analysis, select a table and go to the **Table Contents** page.

Perform an interactive table analysis

Follow these steps to start interactive analysis:

1. Click **Analysis** for a selected variable on the **Table Contents** page.
   If the selected variable is categorical (or discrete) and can be used as a grouping variable, such as **Carrier**, TranStats produces a table showing the distribution of a default variable across that categorical variable. The default variable is chosen based on the actual usage of the data table. For example, most aviation data tables have the number of Passengers as the default variable.

   The following figure shows the results of an analysis of Carriers in T-T100 Domestic Market.

Figure 4.1 Table Analysis – Selecting a Categorical Variable

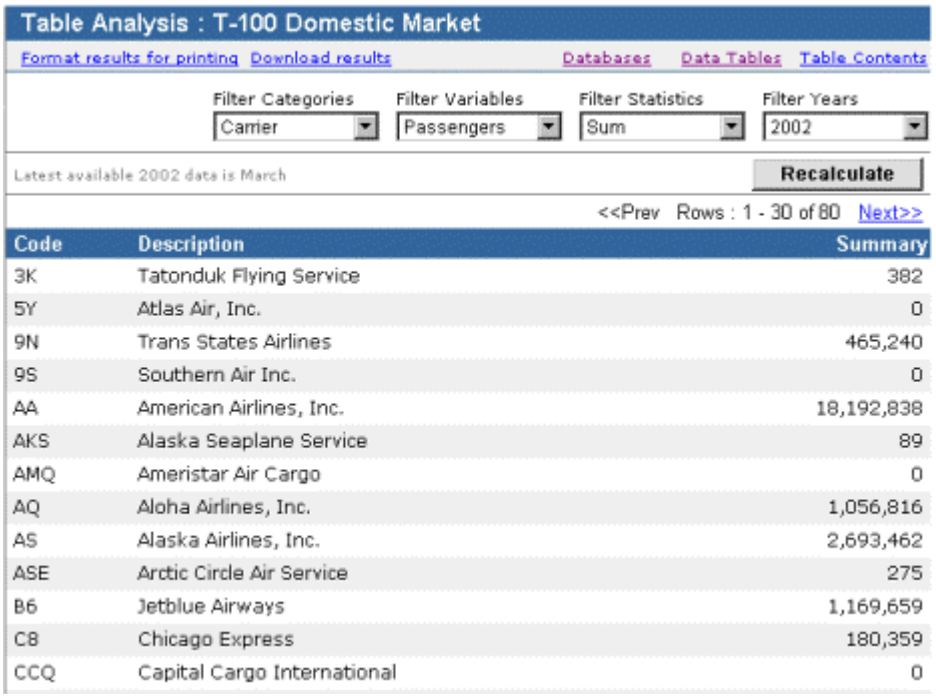


Table Analysis : T-100 Domestic Market

Format results for printing | Download results | Databases | Data Tables | Table Contents

Filter Categories: Carrier | Filter Variables: Passengers | Filter Statistics: Sum | Filter Years: 2002

Latest available 2002 data is March — Recalculate

<<Prev Rows : 1 - 30 of 80 Next>>

Code	Description	Summary
3K	Tatonduk Flying Service	382
5Y	Atlas Air, Inc.	0
9N	Trans States Airlines	465,240
9S	Southern Air Inc.	0
AA	American Airlines, Inc.	18,192,838
AKS	Alaska Seaplane Service	89
AMQ	Ameristar Air Cargo	0
AQ	Aloha Airlines, Inc.	1,056,816
AS	Alaska Airlines, Inc.	2,693,462
ASE	Arctic Circle Air Service	275
B6	Jetblue Airways	1,169,659
C8	Chicago Express	180,359
CCQ	Capital Cargo International	0

On the other hand, if the selected variable is continuous, such as **Passengers** (Number of Passengers) and can be used as a dependent variable, you get a one-line summary.

Figure 4.2 Table Analysis – Selecting a Continuous Variable

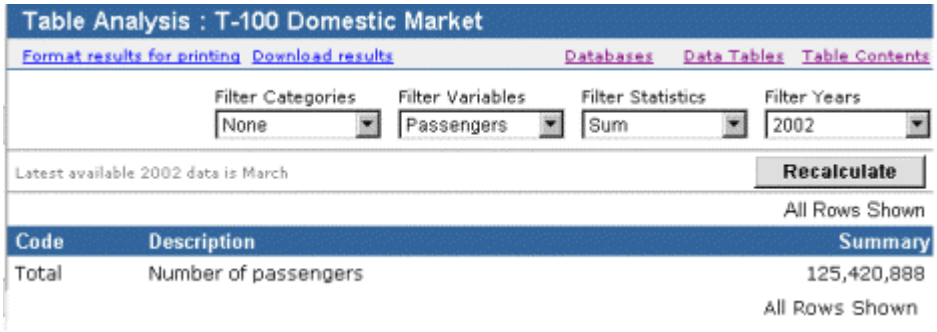


Table Analysis : T-100 Domestic Market

Format results for printing | Download results | Databases | Data Tables | Table Contents

Filter Categories: None | Filter Variables: Passengers | Filter Statistics: Sum | Filter Years: 2002

Latest available 2002 data is March — Recalculate

All Rows Shown

Code	Description	Summary
Total	Number of passengers	125,420,888

All Rows Shown

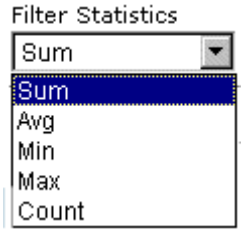
Note that the **Filter Categories** box shows **None**.

This is useful when you only want the total without caring for distribution across any specific categorical variable.

2. Use the filters for interactive analysis
   The first analysis you perform uses default variables, default statistic (which, for most variables, is Sum), and default year (which is the last year). You can use the filter boxes on the top to change the default values and also change the category you would like to analyze.

1) To display another statistic, select one from the Filter Statistics drop-down list. The list changes according to the kind of variable you have selected. The following figure shows the list available for most continuous variables.

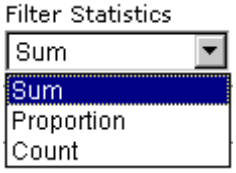
Figure 4.3 Filter Statistics Drop-Down List



Note: **Avg** (Average) is the Sum divided by the number of records. You must know what a record in that data table represents before you can correctly interpret this statistic.
Count is for record count ONLY. To count the number of occurrences, such as Highway Fatalities, you may need to use **Sum**.

A second type of statistics list consists of items shown in the following figure.

Figure 4.4 Filter Statistics Drop-Down List - 2



This list is for those variables that have yes/no (or 0/1) values, for example, *ArrDel15* (arrival delayed 15 minutes or more).

The **Sum** of such a variable provides the number of delays while **Proportion** provides the percentage of delays out of total flights. Again **Count** is valid only for record counts.

2) To analyze another dependent variable, select one from the Filter Variables drop-down list.

Figure 4.5 Filter Variables Drop-Down List

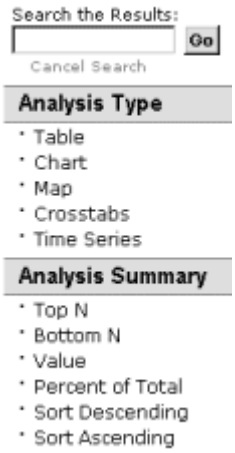
Note: The list includes all continuous variables and variables with dichotomous values that are amenable to analysis.
When you select one of the variables in this box, the **Filter Statistics** box changes accordingly so that you can perform appropriate summary analysis on the selected variable.
Items with an asterisk (*) in front do not exist in the data table. They have been inserted for your convenience. Apart from ***Records**, which exits for all tables for you to do a record count, there are those user-defined functions, such as ***Loadfactor** (the ratio of total passenger miles to total seat miles), which is an accepted indicator in aviation industry.

3) Use the **Filter Categories** box to perform an analysis of a new categorical variable. All fields in the data table that can be used to show different distribution of the dependent variable are listed. Dichotomous variables are also included.
4) After you have made selections in the drop-down lists, click **Recalculate**.
The results of the new analysis are displayed in a similar table.

3. Use the **Analysis Summary** menu on the sidebar to change the way the summary is displayed.

For all analysis pages in TranStats, there is a sidebar that allows you to display the summary statistics in a way you need. The following figure shows the sidebar for the **Table Analysis** page.

Figure 4.6 Table Analysis Sidebar



To change the display, do the following:

1) Click **Top N** to rank the Summary table by value; it is equivalent to Ranking the results in the descending order. The following screen shows Top N of the T-100 Domestic Market analysis we produced earlier.

Figure 4.7 Analysis Results Sorted by Value

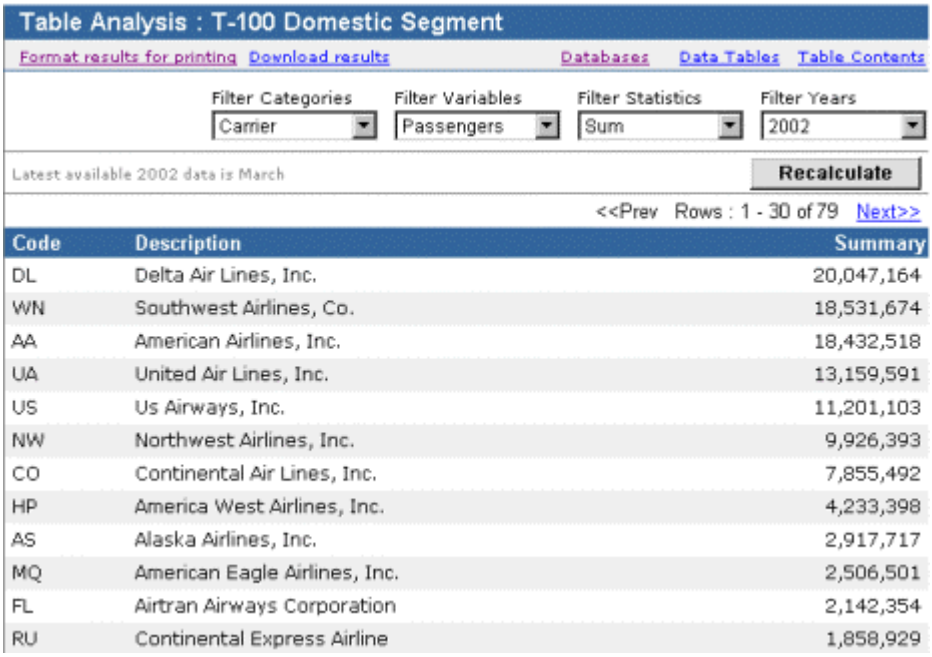


Table Analysis : T-100 Domestic Segment

Format results for printing | Download results | Databases | Data Tables | Table Contents

Filter Categories: Carrier | Filter Variables: Passengers | Filter Statistics: Sum | Filter Years: 2002

Latest available 2002 data is March — Recalculate

<<Prev Rows : 1 - 30 of 79 Next>>

Code	Description	Summary
DL	Delta Air Lines, Inc.	20,047,164
WN	Southwest Airlines, Co.	18,531,674
AA	American Airlines, Inc.	18,432,518
UA	United Air Lines, Inc.	13,159,591
US	Us Airways, Inc.	11,201,103
NW	Northwest Airlines, Inc.	9,926,393
CO	Continental Air Lines, Inc.	7,855,492
HP	America West Airlines, Inc.	4,233,398
AS	Alaska Airlines, Inc.	2,917,717
MQ	American Eagle Airlines, Inc.	2,506,501
FL	Airtran Airways Corporation	2,142,354
RU	Continental Express Airline	1,858,929

Similarly, you can click **Sort Descending** to sort the Code in the descending order.

2) Click Percent of Total to display the percentage instead of the values. It is useful when you study market share or similar problems. The following figure shows the percentage as results.

Figure 4.8 Display Percentage in Table Analysis

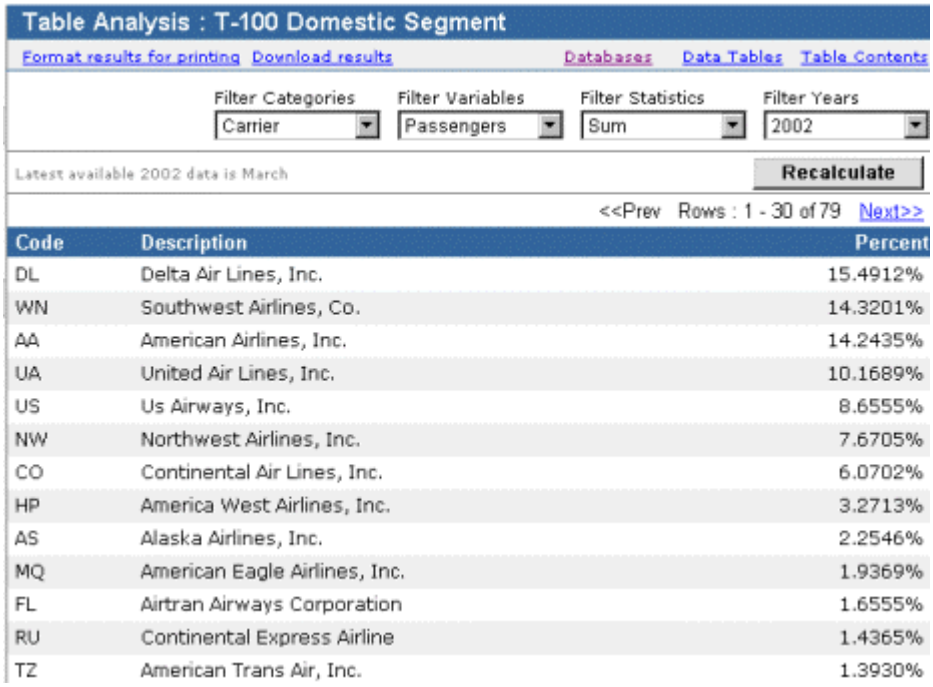


Table Analysis : T-100 Domestic Segment

Format results for printing Download results Databases Data Tables Table Contents

Filter Categories	Filter Variables	Filter Statistics	Filter Years
Carrier	Passengers	Sum	2002

Latest available 2002 data is March — Recalculate

<<Prev Rows : 1 - 30 of 79 Next>>

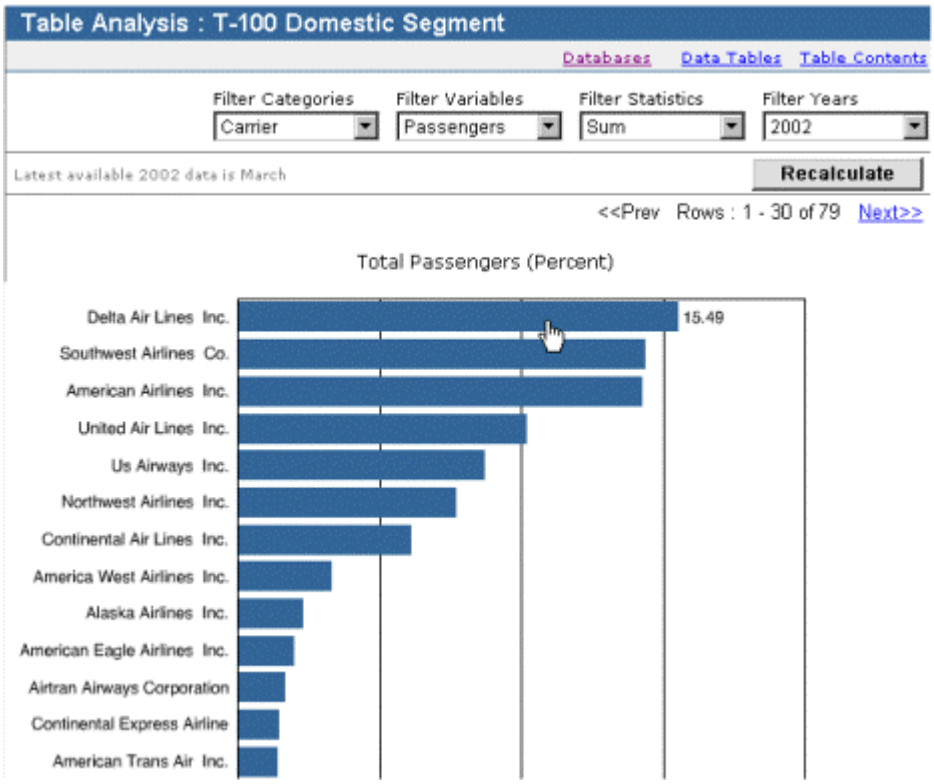
Code	Description	Percent
DL	Delta Air Lines, Inc.	15.4912%
WN	Southwest Airlines, Co.	14.3201%
AA	American Airlines, Inc.	14.2435%
UA	United Air Lines, Inc.	10.1689%
US	Us Airways, Inc.	8.6555%
NW	Northwest Airlines, Inc.	7.6705%
CO	Continental Air Lines, Inc.	6.0702%
HP	America West Airlines, Inc.	3.2713%
AS	Alaska Airlines, Inc.	2.2546%
MQ	American Eagle Airlines, Inc.	1.9369%
FL	Airtran Airways Corporation	1.6555%
RU	Continental Express Airline	1.4365%
TZ	American Trans Air, Inc.	1.3930%

Display charts and maps.

The Summary Type menu allows you to display charts and maps simply by clicking on the item:

1. Click **Chart** to produce a bar chart corresponding to the table on the screen. You have access to the same items under **Analysis Summary**. The following figure shows the chart that ranks the percentage in descending order.

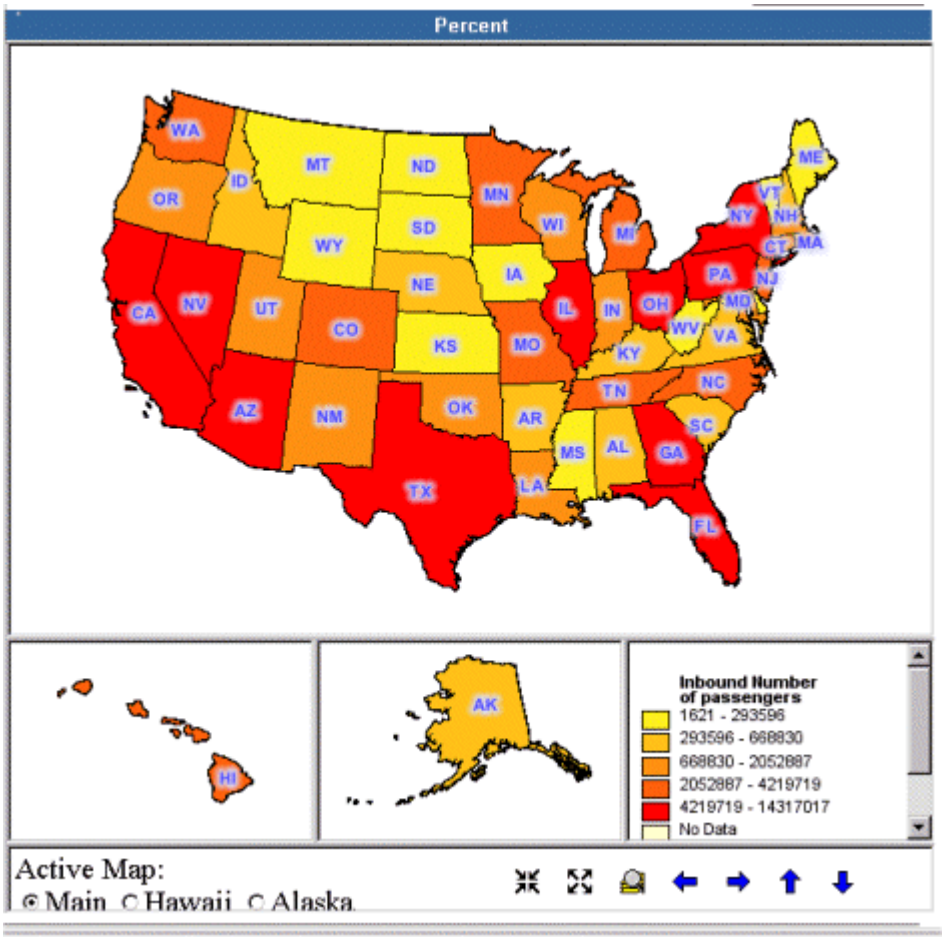
Figure 4.9 Display Chart for a Table Analysis



When you move the mouse over a single bar, the percentage pops up. The filter boxes on the top work in the same way as in the Table format.

2. If the data table has mapping information, **Map** is available on the **Analysis Type** menu. The following figure shows the map produced for the previous analysis.

Figure 4.10 Display Map for a Table Analysis



The usual zoom and pan tools are available on the bottom bar. They are useful especially when you produce a County map.

On this page, you have the same filter boxes as on the **Table Analysis** page and by selecting different values from the drop-down lists, you can produce maps without going to the **Table Analysis** page.

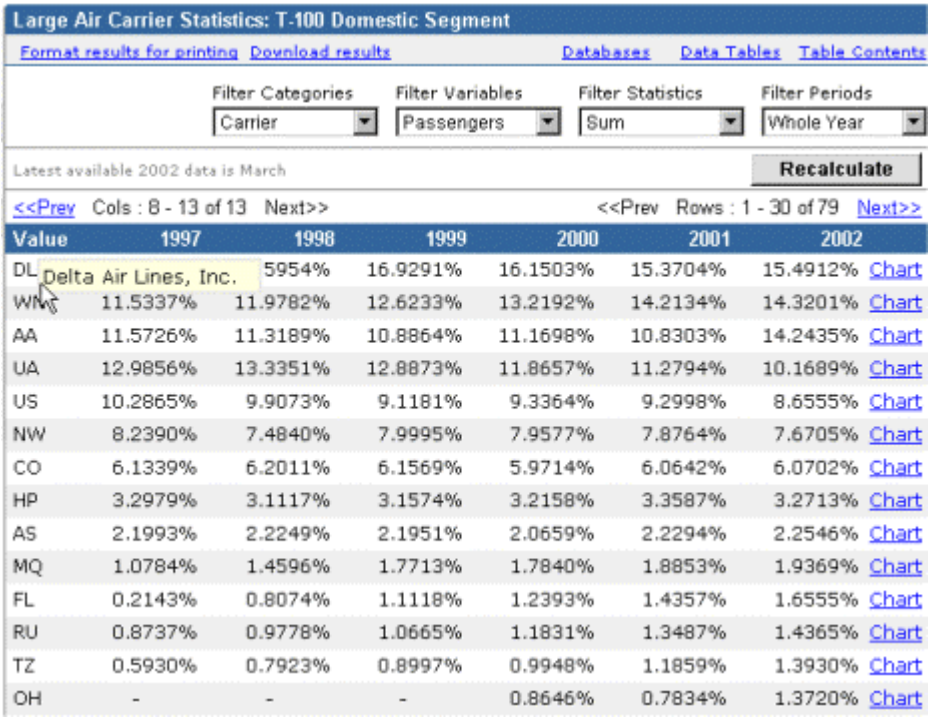
Produce Times Series analysis

If the data table you are analyzing has more than one year of data, you can produce a time series analysis simply by clicking Time Series on the sidebar.

1. On the Table Analysis or Map page, click Time Series to produce the time series analysis.

The screen below shows the same dependent variable and the same categorical variable as the previous Table, Chart, and Map.

Figure 4.11 Time Series Analysis



Large Air Carrier Statistics: T-100 Domestic Segment

Format results for printing | Download results | Databases | Data Tables | Table Contents

Filter Categories: Carrier | Filter Variables: Passengers | Filter Statistics: Sum | Filter Periods: Whole Year

Latest available 2002 data is March — Recalculate

<<Prev Cols : 8 - 13 of 13 Next>> <<Prev Rows : 1 - 30 of 79 Next>>

Value	1997	1998	1999	2000	2001	2002	
DL	Delta Air Lines, Inc.	5954%	16.9291%	16.1503%	15.3704%	15.4912%	Chart
WN	11.5337%	11.9782%	12.6233%	13.2192%	14.2134%	14.3201%	Chart
AA	11.5726%	11.3189%	10.8864%	11.1698%	10.8303%	14.2435%	Chart
UA	12.9856%	13.3351%	12.8873%	11.8657%	11.2794%	10.1689%	Chart
US	10.2865%	9.9073%	9.1181%	9.3364%	9.2998%	8.6555%	Chart
NW	8.2390%	7.4840%	7.9995%	7.9577%	7.8764%	7.6705%	Chart
CO	6.1339%	6.2011%	6.1569%	5.9714%	6.0642%	6.0702%	Chart
HP	3.2979%	3.1117%	3.1574%	3.2158%	3.3587%	3.2713%	Chart
AS	2.1993%	2.2249%	2.1951%	2.0659%	2.2294%	2.2546%	Chart
MQ	1.0784%	1.4596%	1.7713%	1.7840%	1.8853%	1.9369%	Chart
FL	0.2143%	0.8074%	1.1118%	1.2393%	1.4357%	1.6555%	Chart
RU	0.8737%	0.9778%	1.0665%	1.1831%	1.3487%	1.4365%	Chart
TZ	0.5930%	0.7923%	0.8997%	0.9948%	1.1859%	1.3930%	Chart
OH	-	-	-	0.8646%	0.7834%	1.3720%	Chart

The description of the codes is no longer on the page but you can call it up by moving your mouse over the code, as shown in the above screen.

2. If the last year's data is not complete, you can choose to compare the same period across years. In the above screen, as the message states, *Latest available 2002 data is March*.

To compare data from the beginning of the year to March, select **Year to March** in the **Filter Periods** list and click **Recalculate**. The results now compare all years up to March.

Figure 4.12 Compare the Same Period in Time Series

Large Air Carrier Statistics: T-100 Domestic Segment

Format results for printing | Download results | Databases | Data Tables | Table Contents

Filter Categories: Carrier | Filter Variables: Passengers | Filter Statistics: Sum | Filter Periods: Year to March

Latest available 2002 data is March — Recalculate

<<Prev Cols : 8 - 13 of 13 Next>> <<Prev Rows : 1 - 30 of 79 Next>>

Value	1997	1998	1999	2000	2001	2002	
DL	17.8277%	18.0414%	17.6623%	16.7520%	15.4469%	15.4912%	Chart
WN	11.5736%	11.6765%	12.3368%	13.0462%	13.8150%	14.3201%	Chart
AA	11.6860%	11.6747%	10.6875%	11.5322%	10.8832%	14.2435%	Chart
UA	12.8502%	12.8544%	12.8454%	12.4346%	11.2961%	10.1689%	Chart
US	10.3484%	9.9509%	9.2709%	8.7262%	9.4393%	8.6555%	Chart
NW	8.1056%	8.2120%	7.7174%	7.9259%	7.7235%	7.6705%	Chart
CO	6.1521%	6.2081%	6.3614%	6.1950%	6.0825%	6.0702%	Chart
HP	3.4790%	3.1298%	3.0981%	3.1944%	3.4638%	3.2713%	Chart
AS	2.0925%	2.1347%	2.1352%	2.0662%	2.0685%	2.2546%	Chart
MQ	1.0436%	0.7277%	1.7839%	1.8124%	1.7820%	1.9369%	Chart
FL	0.2215%	0.2008%	1.1239%	1.1404%	1.4452%	1.6555%	Chart
RU	0.7477%	0.8598%	0.9746%	1.1289%	1.2034%	1.4365%	Chart
TZ	0.5358%	0.7723%	0.9163%	1.0168%	1.1954%	1.3930%	Chart
OH	-	-	-	-	1.1759%	1.3720%	Chart

Other filters are the same as those on the **Table Analysis** page.

3. Use the sidebar to change the displayed items in Time Series.
The sidebar for Time Series is pertinent to Time Series; for example, it has **Value Change** and **Percent Change**. The following figure shows the Time Series sidebar.

Figure 4.13 Time Series Sidebar

Search the Results: Go

Cancel Search

Analysis Type

- Table
- Crosstabs

Analysis Summary

- Top N
- Bottom N
- Value
- Percent of Total
- Value Change
- Percent Change
- Sort Descending
- Sort Ascending

Note that **Top N** and **Bottom N** rank last year's value only.

The following figure shows the results when you click **Percent Change** on the **Analysis Summary** menu.

Figure 4.14 Display Percentage Change in Time Series

Large Air Carrier Statistics: T-100 Domestic Segment

Format results for printing | Download results | Databases | Data Tables | Table Contents

Filter Categories	Filter Variables	Filter Statistics	Filter Periods
Carrier	Passengers	Sum	Year to March

Latest available 2002 data is March — Recalculate

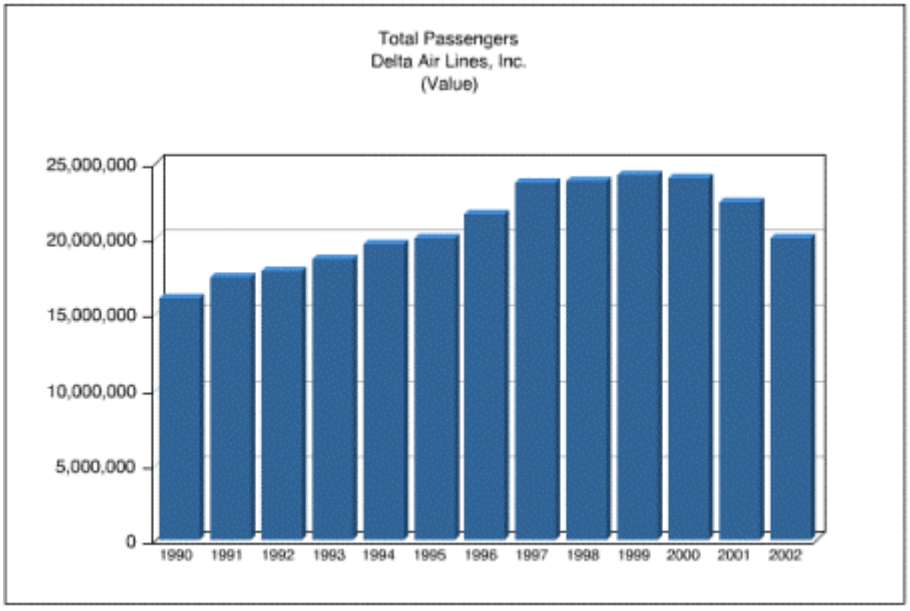
<<Prev Cols : 1 - 6 of 13 Next>> <<Prev Rows : 1 - 30 of 79 Next>>

Value	1990	1991	1992	1993	1994	1995	
DL	-	8.8925%	2.3581%	4.3510%	5.4759%	1.8358%	Chart
WN	-	15.2119%	17.8795%	14.8427%	19.5720%	15.6065%	Chart
AA	-	-7.4270%	10.9389%	3.7211%	-7.7999%	2.2055%	Chart
UA	-	1.9813%	-0.4371%	10.2249%	0.8817%	15.4954%	Chart
US	-	-9.0457%	-7.2432%	-5.8285%	10.4690%	4.6193%	Chart
NW	-	-7.6829%	0.3483%	11.5383%	1.2423%	8.8221%	Chart
CO	-	-1.2773%	6.1789%	-4.6306%	10.7467%	-4.8860%	Chart
HP	-	11.5972%	-13.9527%	-7.4048%	11.1115%	0.3826%	Chart
AS	-	4.4562%	5.4054%	-16.9314%	56.5696%	11.8564%	Chart
MQ	-	-	-	74.3763%	15.8273%	-20.9764%	Chart
FL	-	-	-	-	-	-	Chart
RU	-	-	-	-	-	-	Chart
TZ	-	96.1984%	39.6878%	151.3936%	72.8179%	55.3367%	Chart
OH	-	-	-	-	-	-	Chart

Note: The first year (1990) in the above table shows all dashes as there is no percentage change to calculate. In TranStats, as a rule, dashes indicate either no data or data cannot be calculated.

4. To produce a Time Series chart, click **Chart** for a specific code. The following chart shows data for all years for DL (Delta Airlines).

Figure 4.15 Time Series Chart



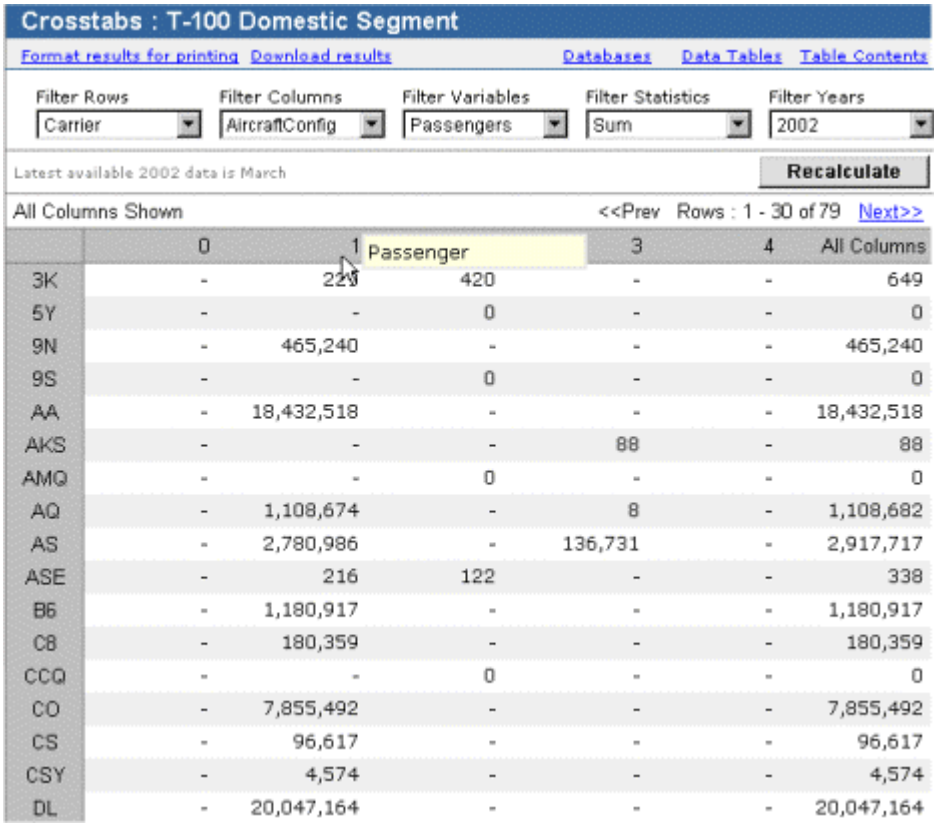
The filter boxes are also available on this chart page and you can produce charts for the same categorical code (group) using different variables.

Produce Crosstabs analysis

TranStats provides the function for performing analysis of one dependent variable grouped by two categorical variables, that is, a crosstabs analysis.

1. Click **Crosstabs** on a sidebar (on a **Table Analysis**, **Time Series**, **Map**, or **Chart** page) to produce the Crosstabs analysis.
   The categorical variable in use is treated as the row variable and a randomly selected categorical variable in the table is used as the column variable. The following figure shows the results of the default Crosstabs analysis from the previous Table Analysis. You can produce this table from the table, the chart, the map, or the Time Series page.

Figure 4.16 Crosstabs Analysis



Crosstabs : T-100 Domestic Segment

Format results for printing | Download results | Databases | Data Tables | Table Contents

Filter Rows: Carrier | Filter Columns: AircraftConfig | Filter Variables: Passengers | Filter Statistics: Sum | Filter Years: 2002

Latest available 2002 data is March — Recalculate

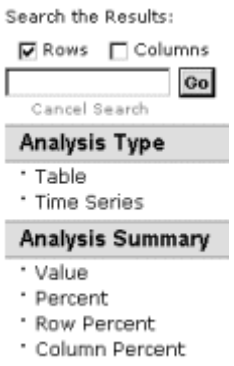
All Columns Shown — <<Prev Rows : 1 - 30 of 79 Next>>

	0	1	Passenger	3	4	All Columns
3K	-	229	420	-	-	649
5Y	-	-	0	-	-	0
9N	-	465,240	-	-	-	465,240
9S	-	-	0	-	-	0
AA	-	18,432,518	-	-	-	18,432,518
AKS	-	-	-	88	-	88
AMQ	-	-	0	-	-	0
AQ	-	1,108,674	-	8	-	1,108,682
AS	-	2,780,986	-	136,731	-	2,917,717
ASE	-	216	122	-	-	338
B6	-	1,180,917	-	-	-	1,180,917
C8	-	180,359	-	-	-	180,359
CCQ	-	-	0	-	-	0
CO	-	7,855,492	-	-	-	7,855,492
CS	-	96,617	-	-	-	96,617
CSY	-	4,574	-	-	-	4,574
DL	-	20,047,164	-	-	-	20,047,164

   Similar to Time Series, you can move your mouse over any code to find the description. Consistent with other analysis pages, the filter boxes allow you to select new variables as row or column grouping fields.

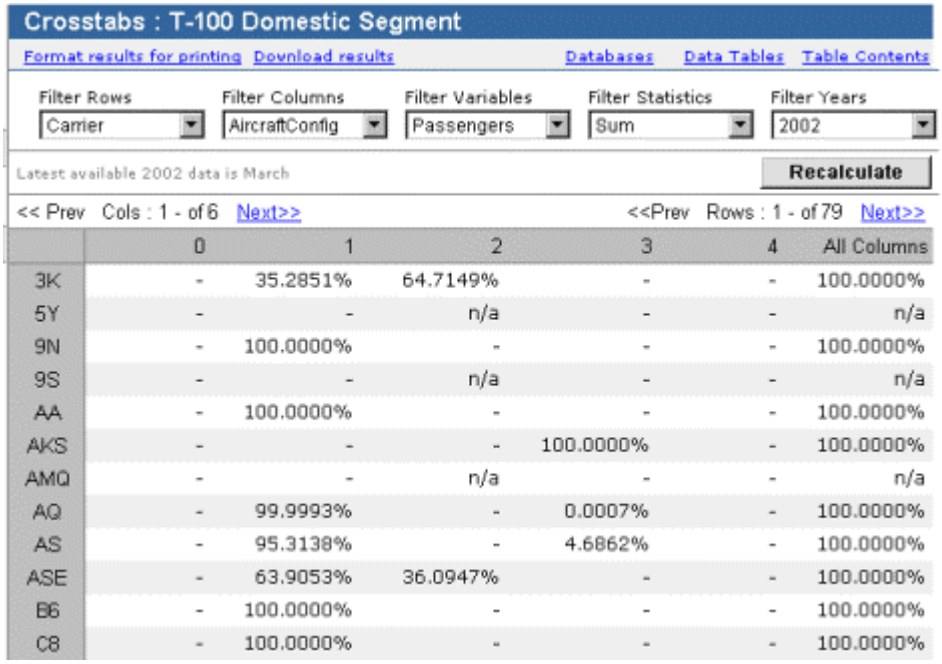
2. Use the sidebar to display row percent, column percent and total percent.
   The Crosstabs sidebar lists these items under Analysis Summary as shown in the following figure.

Figure 4.17 Crosstabs Sidebar



Click **Row Percent** and the values in the Crosstabs analysis change as shown in the following figure.

Figure 4.18 Display Row Percentage in Crosstabs



Crosstabs : T-100 Domestic Segment

Format results for printing | Download results | Databases | Data Tables | Table Contents

Filter Rows	Filter Columns	Filter Variables	Filter Statistics	Filter Years
Carrier	AircraftConfig	Passengers	Sum	2002

Latest available 2002 data is March — Recalculate

<< Prev Cols : 1 - of 6 Next>> <<Prev Rows : 1 - of 79 Next>>

	0	1	2	3	4	All Columns
3K	-	35.2851%	64.7149%	-	-	100.0000%
5Y	-	-	n/a	-	-	n/a
9N	-	100.0000%	-	-	-	100.0000%
9S	-	-	n/a	-	-	n/a
AA	-	100.0000%	-	-	-	100.0000%
AKS	-	-	-	100.0000%	-	100.0000%
AMQ	-	-	n/a	-	-	n/a
AQ	-	99.9993%	-	0.0007%	-	100.0000%
AS	-	95.3138%	-	4.6862%	-	100.0000%
ASE	-	63.9053%	36.0947%	-	-	100.0000%
B6	-	100.0000%	-	-	-	100.0000%
C8	-	100.0000%	-	-	-	100.0000%

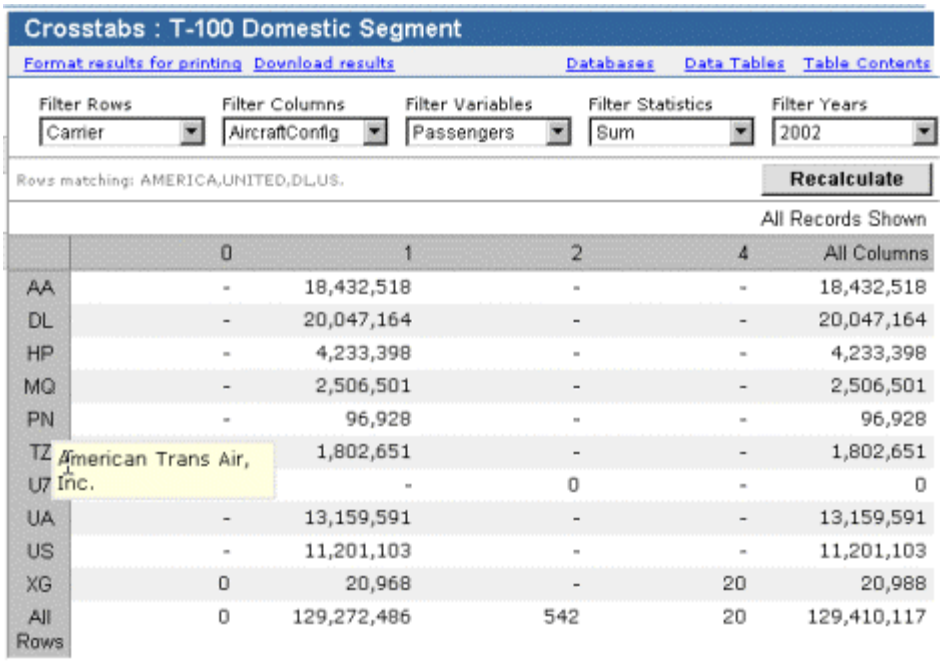
3. Use the search function.
   All analysis pages have a **Search the Results** box that allows you to produce a focus table. In Crosstabs, you can narrow down the results both row wise and column wise.

   To do so, select **Row** or/and **Column** above the search box, type in **all** the codes or partial descriptions (though they are not displayed), each separated by a comma. The following figure shows a search for "*america,united,dl,us*" in rows.

Figure 4.19 Crosstabs Search Box

After you press Enter or click **Go**, TranStats produces a table in much-reduced size as shown in the following figure.

Figure 4.20 Search Results in Crosstabs



Crosstabs : T-100 Domestic Segment

Format results for printing | Download results | Databases | Data Tables | Table Contents

Filter Rows	Filter Columns	Filter Variables	Filter Statistics	Filter Years
Carrier	AircraftConfig	Passengers	Sum	2002

Rows matching: AMERICA,UNITED,DL,US. Recalculate

All Records Shown

	0	1	2	4	All Columns
AA	-	18,432,518	-	-	18,432,518
DL	-	20,047,164	-	-	20,047,164
HP	-	4,233,398	-	-	4,233,398
MQ	-	2,506,501	-	-	2,506,501
PN	-	96,928	-	-	96,928
TZ	American Trans Air, Inc.	1,802,651	-	-	1,802,651
U7	-	-	0	-	0
UA	-	13,159,591	-	-	13,159,591
US	-	11,201,103	-	-	11,201,103
XG	0	20,968	-	20	20,988
All Rows	0	129,272,486	542	20	129,410,117

As the popup description of *TZ* shows, TranStats did a search on both the codes and the descriptions.

Note that the values displayed for **All Rows** and **All Columns** remain the sum of all rows or columns in the entire table, **not** that of the displayed rows and columns.

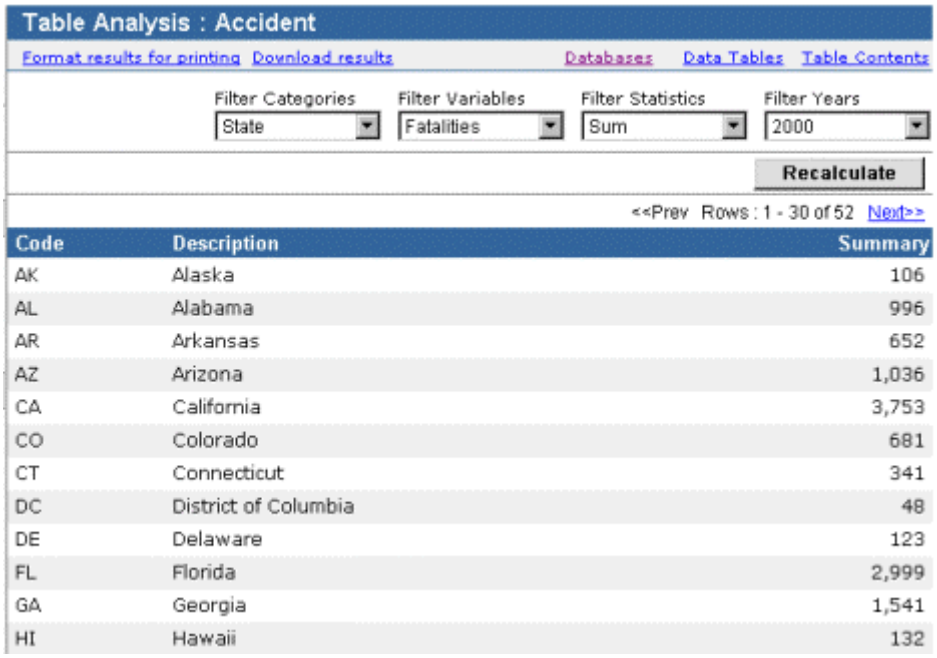
The **Search the Results** function is available on **Table Analysis**, **Time Series**, as well as **Lookup Table** pages. Of course, on those pages, you only search the rows.

Apply rates

In many studies, for example, those of fatalities, rates (per population or per registered vehicles) may be more significant than the absolute numbers. TranStats allows the application of rate.

The following figure shows a Table Analysis page of the Accident table in Fatality Analysis Reporting System.

Figure 4.21 Apply Rate in TranStats



Code	Description	Summary
AK	Alaska	106
AL	Alabama	996
AR	Arkansas	652
AZ	Arizona	1,036
CA	California	3,753
CO	Colorado	681
CT	Connecticut	341
DC	District of Columbia	48
DE	Delaware	123
FL	Florida	2,999
GA	Georgia	1,541
HI	Hawaii	132

As rate information is available and rates are appropriate for this data, an **Apply Rate** box appears on the sidebar as shown in the following figure.

Figure 4.22 Apply Rate Box

The rates in the list box changes according to the categorical variable you have selected. As the current categorical variable is **State**, the list contains the following items:

```
Per 100K Pop by State
Per 100 Million Miles Traveled by State
Per 100K Registered Vehicles by State
Per 100K Licensed Drivers by State
```

If the selected categorical variable is County Fips, then the available rate would be:

```
Per 100K Pop by County
```

and for all other categorical variables, the rate would be:

```
Per 100K Pop US
Per 100 Million Miles Traveled US
Per 100K Registered Vehicles US
Per 100K Licensed Drivers US
```

In the above table analysis, if you select **Per 100K Pop by State**, TranStats calculates the rates and displays which rate is used. See the following figure.

Figure 4.23 Rates Displayed in Table Analysis

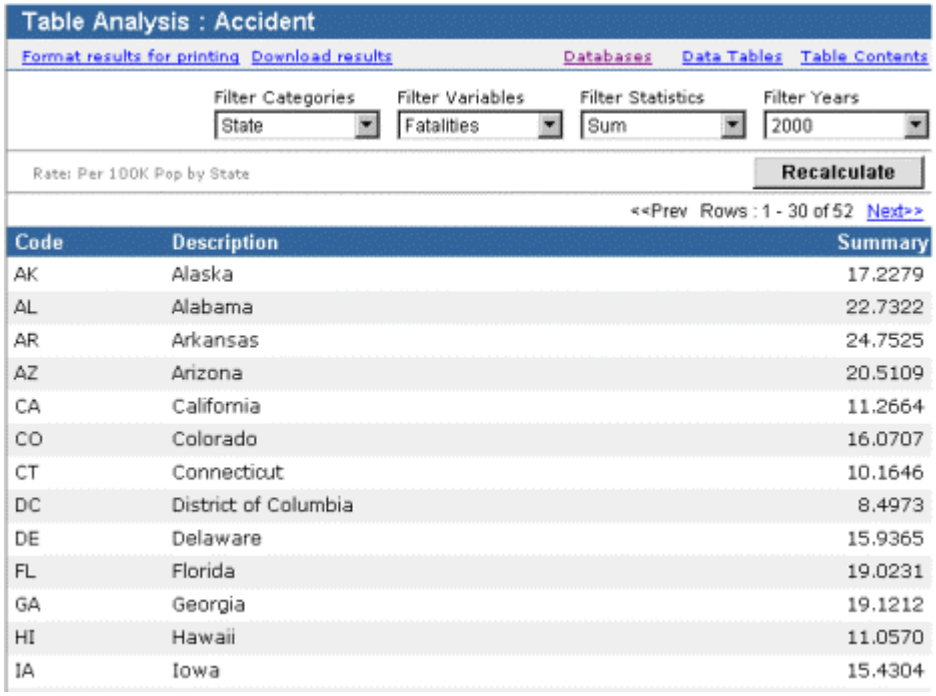


Table Analysis : Accident

Format results for printing | Download results | Databases | Data Tables | Table Contents

Filter Categories: State | Filter Variables: Fatalities | Filter Statistics: Sum | Filter Years: 2000

Rate: Per 100K Pop by State — Recalculate

<<Prev Rows : 1 - 30 of 52 Next>>

Code	Description	Summary
AK	Alaska	17.2279
AL	Alabama	22.7322
AR	Arkansas	24.7525
AZ	Arizona	20.5109
CA	California	11.2664
CO	Colorado	16.0707
CT	Connecticut	10.1646
DC	District of Columbia	8.4973
DE	Delaware	15.9365
FL	Florida	19.0231
GA	Georgia	19.1212
HI	Hawaii	11.0570
IA	Iowa	15.4304

You can rank rates in **Table Analysis**.

Print and download the analysis results

TranStats provides the function for you to format your interactive analysis for printing or download the results in comma-delimited format (with a csv extension) for you to open in Excel.

To print the results, click **Format results for printing**. The printer version expands the description for each code and tries to layout the results in a table format. For large tables, you need to print one page at a time and then piece them together, much in the same way as Excel handles large tables.

The following figure shows a sample of a crosstabs analysis after a search.

Figure 4.24 Results Formatted for Printing

Fatality Analysis Reporting System: Accident
Sum of of Number of Fatalities by State in Which Accident Occurred by Hit and Run

Rows:1-7 of 7 Columns:1-5 of 5 Print Page

		0	1	2	3	All Columns
		No Hit And Run	Hit Vehicle In Trans	Hit Pedestrian	Hit Park Vehicle/Object	All Columns (including those not displayed)
CA	California	3,481	89	161	22	3,753
DC	District of Columbia	42	-	6	-	48
IL	Illinois	1,354	16	47	1	1,418
NC	North Carolina	1,515	11	31	-	1,557
NY	New York	1,391	14	54	1	1,460
SC	South Carolina	1,045	4	15	1	1,065
All Rows	All Rows (including those not displayed)	40,516	426	928	75	41,945

To download the results, click **Download results**. The download process is much the same as you use to download data from data tables.