

Chapter 10

Transportation and the Economy

Summary Statistics from Tables/Figures in this Chapter

Source		
Figure 10.2	Share of gasoline cost attributed to taxes, 2011	
	<i>Canada</i>	31%
	<i>France</i>	57%
	<i>Germany</i>	58%
	<i>Japan</i>	42%
	<i>United Kingdom</i>	60%
	<i>United States</i>	14%
Table 10.12	Average price of a new car, 2010 (current dollars)	24,296
	<i>Domestic</i>	23,095
	<i>Import</i>	26,808
Table 10.13	Car operating costs, 2011	
	<i>Variable costs (constant 2011 dollars per 10,000 miles)</i>	1,774
	<i>Fixed costs (constant 2011 dollars per 10,000 miles)</i>	5,587
Table 10.17	Transportation sector share of total employment	
	<i>2000</i>	8.3%
	<i>2011</i>	7.2%



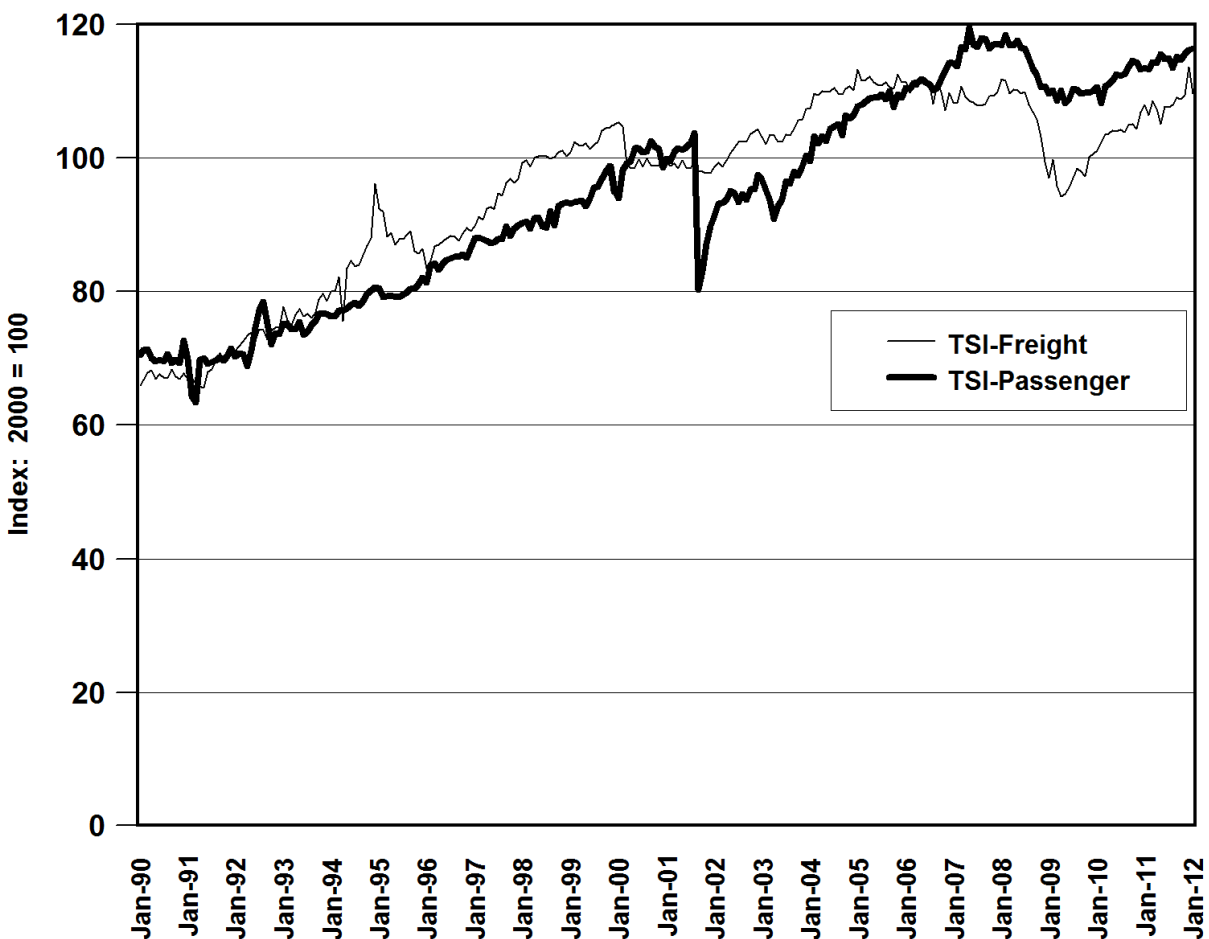
The Transportation Services Index (TSI) was created by the U.S. Department of Transportation Bureau of Transportation Statistics (BTS). It is an index that measures the movement of freight and passengers. The Freight TSI consists of:

- for-hire trucking (parcel services are not included);
- freight railroad services (including rail-based intermodal shipments such as containers on flat cars); inland waterway traffic;
- pipeline movements (including principally petroleum and petroleum products and natural gas); and
- air freight.

The index does not include international or coastal steamship movements, private trucking, courier services, or the United States Postal Services.

The index does not include intercity bus, sightseeing services, taxi service, private car usage, or bicycling and other nonmotorized means of transportation.

Figure 10.1. Transportation Services Index, January 1990–January 2012



Source:

U.S. Department of Transportation, Bureau of Transportation Statistics, Transportation Services Index Web site, www.bts.gov/xml/tsi/src. (Additional resources: www.bts.gov.)



Until 2005, gasoline prices in China were, on average, less than the United States. Since then, the United States prices are the lowest of these listed countries. Those in France, Japan, Korea, the United Kingdom, and Germany paid, on average, more than five dollars per gallon in 2010.

Table 10.1
Gasoline Prices^a for Selected Countries, 1990–2011

	Current dollars per gallon						Average annual percentage change
	1990	1995	2000	2005	2010	2011 ^b	1990–2011
China	^c	1.03	^c	1.70	3.71	^c	^c
Japan	3.16	4.43	3.65	4.28	5.73	7.19	4.2%
India	^c	^c	^c	3.71	4.29	^c	^c
Korea	^c	^c	^c	5.28	5.60	^c	^c
France ^d	3.63	4.26	3.80	5.46	6.74	7.95	4.0%
United Kingdom ^d	2.82	3.21	4.58	5.97	5.83	8.21	5.5%
Germany	2.65	3.96	3.45	5.66	7.10	8.49	6.0%
Canada	1.87	1.53	1.86	2.89	3.79	4.86	4.9%
United States ^e	1.16	1.15	1.51	2.27	2.78	3.63	5.9%

	Constant 2011 dollars ^f per gallon						Average annual percentage change
	1990	1995	2000	2005	2010	2011 ^b	1990–2011
China	^c	1.52	^c	1.96	3.83	^c	^c
Japan	5.27	6.54	4.77	4.93	5.92	7.19	1.6%
India	^c	^c	^c	4.27	4.43	^c	^c
Korea	^c	^c	^c	6.08	5.78	^c	^c
France ^d	6.06	6.29	4.96	6.29	6.95	7.95	1.4%
United Kingdom ^d	4.70	4.74	5.98	6.87	7.05	8.21	2.8%
Germany	4.42	5.84	4.51	6.51	7.33	8.49	3.3%
Canada	3.12	2.26	2.43	3.33	3.91	4.86	2.2%
United States ^e	1.94	1.70	1.97	2.62	2.87	3.63	3.2%

Source:

International Energy Agency, *Energy Prices and Taxes, Fourth Quarter, 2011*, Paris, France, 2012. (Additional resources: www.iea.org)

Note: Comparisons between prices and price trends in different countries require care. They are of limited validity because of fluctuations in exchange rates; differences in product quality, marketing practices, and market structures; and the extent to which the standard categories of sales are representative of total national sales for a given period.

^a Prices represent the retail prices (including taxes) for regular unleaded gasoline, except for France and the United Kingdom which are premium unleaded gasoline.

^b 3rd quarter 2011.

^c Data are not available.

^d Premium gasoline.

^e These estimates are international comparisons only and do not necessarily correspond to gasoline price estimates in other sections of the book.

^f Adjusted by the U.S. Consumer Price Inflation Index.



Of these selected countries, the United Kingdom had the highest diesel fuel price average in 2011, while the United States had the lowest. Similar to the trend with gasoline prices, China's diesel prices were lower than the United States until 2009.

Table 10.2
Diesel Fuel Prices^a for Selected Countries, 1998–2011

	Current dollars per gallon								Average annual percentage change
	1998	2000	2003	2004	2005	2007	2010	2011 ^b	1998–2011
China	^c	^c	1.32	1.47	1.69	2.42	3.65	^c	^c
Japan	2.25	2.85	2.76	3.08	3.45	3.82	4.86	6.20	5.2%
Korea	^c	2.05	2.47	3.00	3.98	5.17	4.92	6.11	^c
France	2.71	2.95	3.39	4.16	4.81	5.66	5.74	6.95	4.8%
United Kingdom	4.10	4.66	4.82	5.68	6.25	7.34	6.97	8.48	3.7%
Germany	2.45	2.79	3.79	4.41	5.01	6.06	6.15	7.62	5.8%
United States ^d	1.04	1.50	1.51	1.81	2.40	2.88	2.99	3.86	6.8%
	Constant 2011 dollars ^e per gallon								Average annual percentage change
	1998	2000	2003	2004	2005	2007	2010	2011 ^b	1998–2010
China	^c	^c	1.62	1.75	1.95	2.63	3.77	^c	^c
Japan	3.11	3.73	3.37	3.67	3.97	4.15	5.02	6.20	3.5%
Korea	^c	2.68	3.02	3.57	4.59	5.61	5.08	6.11	^c
France	3.74	3.85	4.15	4.95	5.54	6.14	5.92	6.95	3.1%
United Kingdom	5.66	6.08	5.89	6.77	7.20	7.97	7.19	8.48	2.0%
Germany	3.38	3.65	4.63	5.25	5.77	6.57	6.34	7.62	4.1%
United States ^d	1.44	1.95	1.84	2.15	2.76	3.13	3.09	3.86	5.1%

Source:

International Energy Agency, *Energy Prices and Taxes, Fourth Quarter, 2011*, Paris, France, 2012 (Additional resources: www.iea.org)

Note: Comparisons between prices and price trends in different countries require care. They are of limited validity because of fluctuations in exchange rates; differences in product quality, marketing practices, and market structures; and the extent to which the standard categories of sales are representative of total national sales for a given period.

^a Prices represent the retail prices (including taxes) for car diesel fuel for non-commercial (household) use.

^b 3rd quarter 2011.

^c Data are not available.

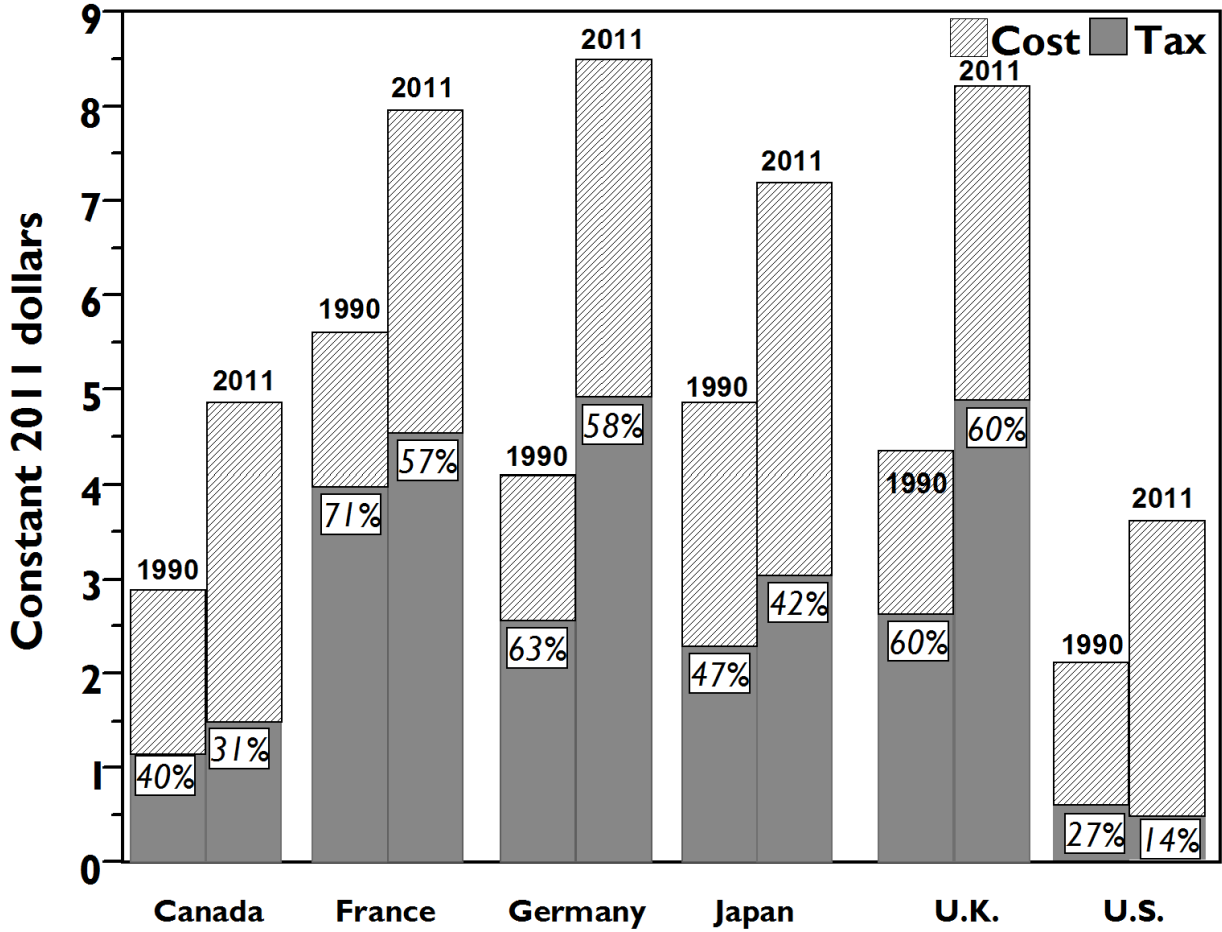
^d These estimates are for international comparisons only and do not necessarily correspond to gasoline price estimates in other sections of the book.

^e Adjusted by the U.S. Consumer Price Inflation Index.



In 2011 close to sixty percent of the cost of gasoline in France, Germany, and the United Kingdom went for taxes. Of the listed countries, the United States has the lowest percentage of taxes.

Figure 10.2. Gasoline Prices for Selected Countries, 1990 and 2011



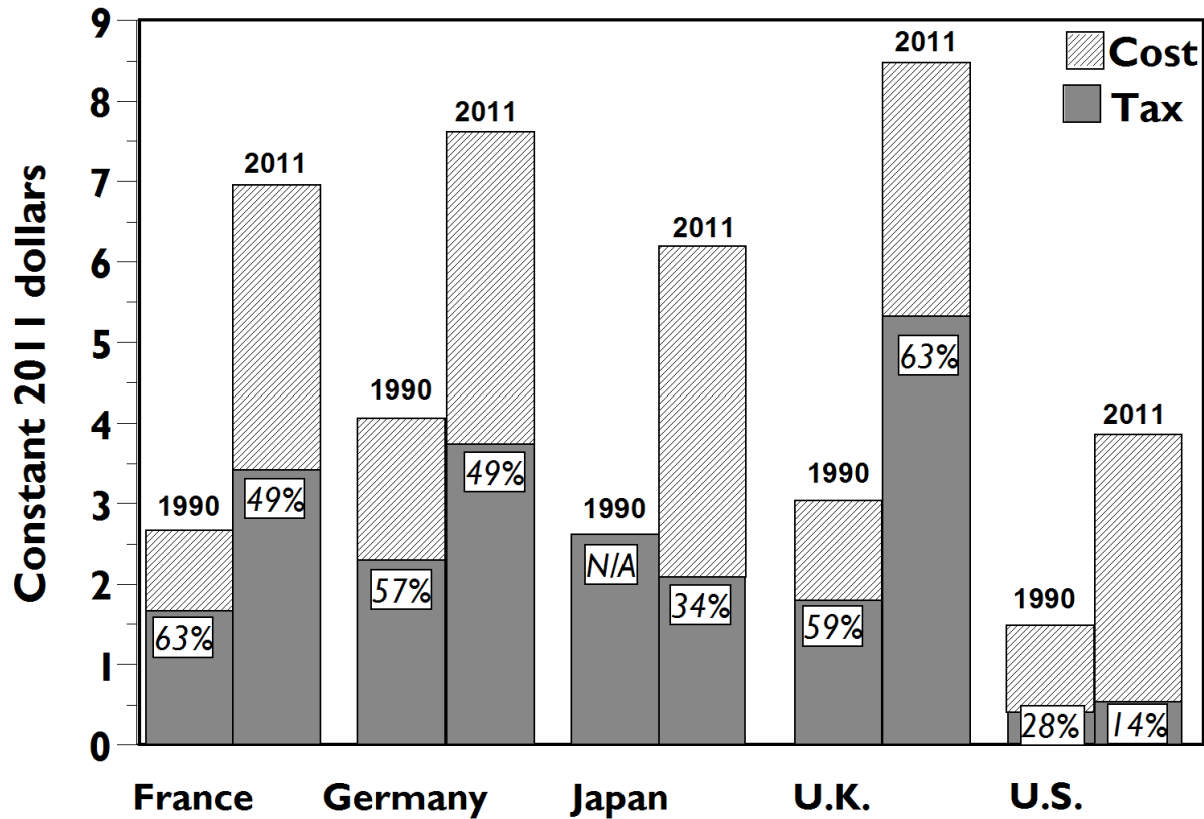
Source:

Table 10.1 and International Energy Agency, *Energy Prices & Taxes, Fourth Quarter, 2011*, Paris, France, 2012.
 (Additional resources: www.iea.org.)



Diesel fuel is taxed heavily in the European countries shown here. The U.S. diesel fuel tax share is the lowest of the listed countries.

Figure 10.3. Diesel Prices for Selected Countries, 1990 and 2011



Source:

Table 10.2 and International Energy Agency, *Energy Prices & Taxes, Fourth Quarter, 2011*, Paris, France, 2012.
(Additional resources: www.iea.org.)

Note: Data for Canada are not available.



Though the cost of crude oil certainly influences the price of gasoline, it is not the only factor which determines the price at the pump. Processing cost, transportation cost, and taxes also play a major part of the cost of a gallon of gasoline. The average price of a barrel of crude oil (in constant 2011 dollars) increased by 176% from 2000 to 2011, while the average price of a gallon of gasoline increased 75% in this same time period.

Table 10.3
Prices for a Barrel of Crude Oil and a Gallon of Gasoline, 1978–2011

Year	Crude oil ^a (dollars per barrel)		Gasoline ^b (cents per gallon)		Ratio of gasoline to crude oil
	Current	Constant 2011 ^c	Current	Constant 2011 ^c	
1978	12.5	43.0	65.2	224.9	219.8
1979	17.7	54.9	88.2	273.3	209.1
1980	28.1	76.6	122.1	333.3	182.7
1981	35.2	87.2	135.3	334.8	161.3
1982	31.9	74.3	128.1	298.6	168.8
1983	29.0	65.5	122.5	276.7	177.5
1984	28.6	62.0	119.8	259.4	175.7
1985	26.8	55.9	119.6	250.0	187.8
1986	14.6	29.9	93.1	191.1	268.7
1987	17.9	35.4	95.7	189.5	224.5
1988	14.7	27.9	96.3	183.1	275.7
1989	18.0	32.6	106.0	192.3	247.7
1990	22.2	38.2	121.7	209.4	230.0
1991	19.1	31.5	119.6	197.5	263.5
1992	18.4	29.5	119.0	190.8	271.2
1993	16.4	25.5	117.3	182.6	300.2
1994	15.6	23.7	117.4	178.2	316.3
1995	17.2	25.4	120.5	177.9	293.7
1996	20.7	29.7	128.8	184.7	261.2
1997	19.0	26.7	129.1	180.9	284.8
1998	12.5	17.3	111.5	153.9	374.0
1999	17.5	23.6	122.1	164.9	292.9
2000	28.3	36.9	156.3	204.2	232.3
2001	23.0	29.1	153.1	194.5	280.2
2002	24.1	30.1	144.1	180.2	251.1
2003	28.5	34.9	163.8	200.2	241.1
2004	37.0	44.0	192.3	229.0	218.4
2005	50.2	57.9	233.8	269.3	195.5
2006	60.2	67.2	263.5	294.0	183.7
2007	67.9	73.7	284.9	309.1	176.1
2008	94.7	99.0	331.7	346.5	147.0
2009	59.3	62.1	240.1	251.7	170.1
2010	76.7	79.1	283.6	292.6	155.3
2011	101.9	101.9	357.7	357.7	147.4
<i>Average annual percentage change</i>					
1978–2011	6.6%	2.6%	5.3%	1.4%	
2001–2011	16.0%	13.4%	9.2%	6.3%	

Sources:

Crude oil – U.S. Department of Energy, Energy Information Administration, *Monthly Energy Review*, March 2012, Washington, DC, Table 9.1.

Gasoline – U.S. Department of Energy, Energy Information Administration, *Monthly Energy Review*, March 2012, Washington, DC, Table 9.4. (Additional resources: www.eia.doe.gov)

^a Refiner acquisition cost of composite (domestic and imported) crude oil.

^b Average for all types. These prices were collected from a sample of service stations in 85 urban areas selected to represent all urban consumers. Urban consumers make up about 80% of the total U.S. population.

^c Adjusted by the Consumer Price Inflation Index.



Until 2005 the price of diesel fuel was lower than gasoline. Since then, the diesel fuel price has been higher than gasoline.

Table 10.4
Retail Prices for Motor Fuel, 1978–2011
(cents per gallon, including tax)

Year	Diesel fuel ^a		Average for all gasoline types ^b	
	Current	Constant 2011 ^c	Current	Constant 2011 ^c
1978	^d	^d	65	225
1979	^d	^d	88	273
1980	101	276	122	333
1981	118	292	135	335
1982	116	270	128	299
1983	120	271	123	277
1984	122	264	120	259
1985	122	255	120	250
1986	94	193	93	191
1987	96	190	96	189
1988	95	181	96	183
1989	102	185	106	192
1990	107	184	122	209
1991	91	150	120	198
1992	106	170	119	191
1993	98	153	117	183
1994	111	169	117	178
1995	111	164	121	178
1996	124	177	129	185
1997	120	168	129	181
1998	104	144	112	154
1999	112	151	122	165
2000	149	195	156	204
2001	140	178	153	194
2002	132	165	144	180
2003	151	184	164	200
2004	181	216	192	229
2005	240	277	234	269
2006	271	302	264	294
2007	289	313	285	309
2008	380	397	332	347
2009	247	259	240	252
2010	299	308	284	293
2011	384	384	358	358
	<i>Average annual percentage change</i>			
1978–2011	4.4% ^e	1.1% ^e	5.3%	1.4%
2001–2011	10.6%	8.0%	8.9%	6.3%

Sources:

Gasoline – U.S. Department of Energy, Energy Information Administration, *Monthly Energy Review*, March 2012, Washington, DC, Table 9.4.

Diesel – U.S. Department of Energy, Energy Information Administration, *International Energy Annual 2004*, Washington, DC, June 2004, Table 7.2. 2005–2011 data from EIA Web site. (Additional resources: www.eia.doe.gov)

^a 1980–1993: Collected from a survey of prices on January 1 of the current year. 1994–on: Annual average.

^b These prices were collected from a sample of service stations in 85 urban areas selected to represent all urban consumers. Urban consumers make up about 80 percent of the total U.S. population.

^c Adjusted by the Consumer Price Inflation Index.

^d Data are not available.

^e Average annual percentage change is from the earliest year possible to 2011.



The fuel prices shown here are **refiner sales prices** of transportation fuels to end users, excluding tax. Sales to end users are those made directly to the ultimate consumer, including bulk consumers. Bulk sales to utility, industrial, and commercial accounts previously included in the wholesale category are now counted as sales to end users.

Table 10.5
Refiner Sales Prices for Propane and No. 2 Diesel, 1978–2011
(cents per gallon, excluding tax)

Year	Propane ^a		No 2. diesel fuel	
	Current	Constant 2011 ^b	Current	Constant 2011 ^b
1978	33.5	115.6	37.7	130.1
1979	35.7	110.6	58.5	181.3
1980	48.2	131.6	81.8	223.3
1981	56.5	139.8	99.5	246.2
1982	59.2	138.0	94.2	219.6
1983	70.9	160.1	82.6	186.5
1984	73.7	159.6	82.3	178.2
1985	71.7	149.9	78.9	164.9
1986	74.5	152.9	47.8	98.1
1987	70.1	138.8	55.1	109.1
1988	71.4	135.8	50.0	95.1
1989	61.5	111.6	58.5	106.1
1990	74.5	128.2	72.5	124.8
1991	73.0	120.6	64.8	107.0
1992	64.3	103.1	61.9	99.2
1993	67.3	104.8	60.2	93.7
1994	53.0	80.4	55.4	84.1
1995	49.2	72.6	56.0	82.7
1996	60.5	86.7	68.1	97.6
1997	55.2	77.4	64.2	90.0
1998	40.5	55.9	49.4	68.2
1999	45.8	61.8	58.4	78.9
2000	60.3	78.8	93.5	122.1
2001	50.6	64.3	84.2	106.9
2002	41.9	52.4	76.2	95.3
2003	57.7	70.5	94.4	115.4
2004	83.9	99.9	124.3	148.0
2005	108.9	125.4	178.6	205.7
2006	135.8	151.5	209.6	233.9
2007	148.9	161.5	226.7	245.9
2008	189.2	197.7	315.0	329.1
2009	122.0	127.9	183.4	192.3
2010	148.1	152.8	213.4	220.1
2011	170.9	170.9	311.7	311.7
<i>Average annual percentage change</i>				
1978–2011	5.1%	1.2%	6.6%	2.7%
2001–2011	170.9%	10.3%	14.0%	11.3%

Source:

U.S. Department of Energy, Energy Information Administration, *Monthly Energy Review*, April 2012, Washington, DC, Table 9.7. (Additional resources: www.eia.doe.gov)

^a Consumer grade.

^b Adjusted by the Consumer Price Inflation Index.



Prices of finished aviation gasoline began climbing in 1999 and peaked in 2008. In 2011 the prices showed an increase over 2010. Kerosene-type jet fuel rose to its highest price in 2011—a sharp jump from 2010.

Table 10.6
Refiner Sales Prices for Aviation Gasoline and Jet Fuel, 1978–2011
 (cents per gallon, excluding tax)

Year	Finished aviation gasoline		Kerosene-type jet fuel	
	Current	Constant 2011 ^a	Current	Constant 2011 ^a
1978	51.6	178.0	38.7	133.5
1979	68.9	213.5	54.7	169.5
1980	108.4	295.9	86.6	236.4
1981	130.3	322.4	102.4	253.4
1982	131.2	305.8	96.3	224.5
1983	125.5	283.4	87.8	198.3
1984	123.4	267.2	84.2	182.3
1985	120.1	251.1	79.6	166.4
1986	101.1	207.5	52.9	108.6
1987	90.7	179.6	54.3	107.5
1988	89.1	169.4	51.3	97.5
1989	99.5	180.5	59.2	107.4
1990	112.0	192.8	76.6	131.8
1991	104.7	172.9	65.2	107.7
1992	102.7	164.7	61.0	97.8
1993	99.0	154.1	58.0	90.3
1994	95.7	145.3	53.4	81.1
1995	100.5	148.3	54.0	79.7
1996	111.6	160.0	65.1	93.3
1997	112.8	158.1	61.3	85.9
1998	97.5	134.5	45.2	62.4
1999	105.9	143.0	54.3	73.3
2000	130.6	170.6	89.9	117.4
2001	132.3	168.0	77.5	98.4
2002	128.8	161.0	72.1	90.2
2003	149.3	182.5	87.2	106.6
2004	181.9	216.6	120.7	143.7
2005	223.1	257.0	173.5	199.8
2006	268.2	299.2	199.8	222.9
2007	284.9	309.1	216.5	234.9
2008	327.3	341.9	305.2	318.9
2009	244.2	256.0	170.4	178.7
2010	302.8	312.4	220.1	227.0
2011	308.3	308.3	308.8	308.8
		<i>Average annual percentage change</i>		
1978–2011	5.6%	1.7%	6.5%	2.6%
2001–2011	8.8%	6.3%	14.8%	12.1%

Source:

U.S. Department of Energy, Energy Information Administration, *Monthly Energy Review*, April 2012, Washington, DC, Table 9.7. (Additional resources: www.eia.doe.gov)

^a Adjusted by the Consumer Price Inflation Index.



At the end of 2010, only four states offered tax exemptions to encourage the use of gasohol for transportation purposes. This list is quite short compared to the 30 states which offered gasohol tax exemptions twenty-five years ago.

Table 10.7
State Tax Exemptions for Gasohol, 2010

State	Exemption (cents/gallon of gasohol)
Hawaii	1.0
Iowa	2.0
Maine	6.5
Montana	4.0

Source:

U.S. Department of Transportation, Federal Highway Administration, *Highway Statistics 2010*, August 2011, Washington, DC, Table MF-121T. (Additional resources: www.fhwa.dot.gov)

Table 10.8
Federal Excise Taxes on Motor Fuels, 2010

Fuel	Cents per gallon
Gasoline ^a	18.4
Diesel and kerosene	24.4
Gasohol ^b	18.4
Other special fuels ^b	18.4
CNG	18.3
LNG	24.3
LPG	18.3

Source:

U.S. Department of Transportation, Federal Highway Administration, *Highway Statistics 2010*, August 2011, Washington, DC, Table FE-21B. (Additional resources: www.fhwa.dot.gov)

^a All gasohol blends are taxed at the same rate.

^b Includes benzol, benzene, naphtha, and other liquids used as a motor fuel.



These states have laws and incentives for alternative fuels production and/or use.

Table 10.9
Federal and State Alternative Fuel Incentives, 2012

State	Biodiesel	Ethanol	Natural Gas	Liquefied petroleum gas (LPG)	Electric vehicles (EVs)	Neighborhood electric vehicles (NEVs)	Hydrogen fuel cells	Aftermarket conversions
Federal	36	35	26	25	23	3	27	6
Alabama	7	5	4	4	4	0	3	0
Alaska	1	2	3	1	1	1	1	2
Arizona	7	6	14	14	15	1	11	0
Arkansas	5	4	8	4	2	0	2	2
California	15	12	25	17	36	3	24	7
Colorado	7	8	9	6	5	1	6	3
Connecticut	5	4	7	4	6	0	6	3
Delaware	3	3	3	5	3	1	2	0
Dist. of Columbia	1	2	4	3	5	0	3	0
Florida	9	10	2	2	6	1	5	0
Georgia	6	6	5	3	5	0	3	2
Hawaii	8	10	4	4	9	1	5	0
Idaho	3	1	3	3	1	1	2	0
Illinois	17	18	7	7	12	1	7	4
Indiana	9	14	9	6	7	1	5	3
Iowa	12	16	6	5	7	1	5	1
Kansas	7	12	5	4	1	1	1	1
Kentucky	7	7	6	4	2	1	1	0
Louisiana	7	10	10	5	4	1	1	2
Maine	7	7	4	4	5	3	3	0
Maryland	2	3	1	1	8	2	0	0
Massachusetts	5	4	4	2	4	0	2	0
Michigan	6	6	4	4	9	0	5	0
Minnesota	6	11	3	2	4	2	3	0
Mississippi	4	4	8	5	2	0	2	1
Missouri	7	6	7	6	4	1	5	0
Montana	8	7	4	4	2	2	2	1
Nebraska	5	7	4	3	2	1	1	1
Nevada	6	5	10	10	10	1	9	0
New Hampshire	6	2	2	2	2	1	2	0
New Jersey	2	2	3	3	5	2	2	0
New Mexico	11	8	6	5	6	1	7	1
New York	8	9	9	6	7	1	7	0
North Carolina	14	13	6	6	11	0	5	1
North Dakota	14	10	3	2	1	1	3	0
Ohio	5	6	5	5	4	0	5	1
Oklahoma	9	10	12	9	9	1	8	4
Oregon	9	10	7	6	10	1	5	2
Pennsylvania	6	6	6	5	4	0	4	1
Rhode Island	3	2	2	1	2	1	2	0
South Carolina	10	8	3	4	3	1	7	0
South Dakota	7	8	1	2	0	0	0	0
Tennessee	12	11	5	5	6	1	2	0
Texas	5	6	14	9	10	1	5	3
Utah	1	1	10	6	6	0	2	2
Vermont	5	5	7	5	5	2	5	1
Virginia	17	14	16	13	19	2	13	5
Washington	18	15	9	8	19	1	6	4
West Virginia	5	5	7	7	7	1	7	2
Wisconsin	13	10	7	8	6	1	7	0
Wyoming	0	1	1	0	0	0	0	0
Totals	408	407	350	284	346	50	256	66

Source:

U.S. Department of Energy, Energy Efficiency and Renewable Energy, Alternative Fuels Data Center. Data downloaded April 2012. (Additional resources: www.eere.energy.gov/afdc/laws/matrix/tech)



Table 10.10
Federal and State Advanced Technology Incentives, 2012

State	Hybrid electric vehicles (HEV) or plug-in hybrid vehicles (PHEVs)	Fuel economy or efficiency	Idle reduction	Other ^a
Federal	9	17	7	7
Alabama	1	1	2	0
Alaska	0	1	0	0
Arizona	6	0	2	2
Arkansas	0	1	2	0
California	29	5	4	8
Colorado	3	1	2	0
Connecticut	5	2	3	3
Delaware	2	2	3	0
Dist. of Columbia	3	2	1	1
Florida	2	1	2	1
Georgia	0	1	2	1
Hawaii	7	1	1	0
Idaho	2	1	0	0
Illinois	10	3	5	0
Indiana	6	1	1	0
Iowa	0	1	0	0
Kansas	0	1	1	0
Kentucky	1	1	0	0
Louisiana	2	1	0	0
Maine	2	2	3	1
Maryland	6	0	1	1
Massachusetts	3	0	1	1
Michigan	8	1	1	0
Minnesota	2	1	3	1
Mississippi	1	1	0	0
Missouri	0	0	1	0
Montana	0	1	0	0
Nebraska	0	0	1	0
Nevada	6	0	1	0
New Hampshire	1	1	4	0
New Jersey	5	2	1	4
New Mexico	2	1	1	1
New York	4	1	3	2
North Carolina	6	1	4	0
North Dakota	0	0	0	0
Ohio	0	0	2	0
Oklahoma	3	0	1	0
Oregon	4	1	4	4
Pennsylvania	1	1	4	1
Rhode Island	1	1	2	3
South Carolina	3	0	2	0
South Dakota	0	0	0	1
Tennessee	5	2	0	1
Texas	8	0	4	0
Utah	2	3	3	0
Vermont	4	3	2	2
Virginia	10	4	2	1
Washington	6	2	3	2
West Virginia	4	0	2	1
Wisconsin	4	0	2	0
Wyoming	0	0	0	0
Totals	189	73	96	50

Source:

U.S. Department of Energy, Energy Efficiency and Renewable Energy, Alternative Fuels Data Center. Data downloaded April 2012. (Additional resources: www.eere.energy.gov/afdc/laws/matrix/tech)

^a Includes Clean Fuel Initiatives and Pollution Prevention.



The average price of a new car in 2010 (\$24,296) was very close to the average price in 1916 (\$21,621) when adjusted for inflation. Average new car prices were at their lowest in 1940 (\$12,093). Since 1914 the highest average price was in the year 1998 (\$27,242).

Table 10.11
Average Price of a New Car, 1913–2010

Year	2010 Constant dollars	Year	2010 Constant dollars	Year	2010 Constant dollars	Year	2010 Constant dollars
1913	\$31,516	1938	\$13,926	1963	\$19,395	1988	\$25,680
1914	\$32,615	1939	\$13,009	1964	\$19,492	1989	\$25,272
1915	\$27,118	1940	\$12,093	1965	\$19,123	1990	\$25,096
1916	\$21,621	1941	\$12,250	1966	\$19,108	1991	\$24,775
1917	\$19,972	1942	\$12,407	1967	\$20,996	1992	\$25,390
1918	\$18,323	1943	\$12,564	1968	\$19,784	1993	\$25,459
1919	\$18,140	1944	\$12,721	1969	\$19,784	1994	\$26,342
1920	\$17,957	1945	\$12,878	1970	\$19,906	1995	\$25,696
1921	\$19,056	1946	\$13,034	1971	\$20,147	1996	\$26,096
1922	\$20,156	1947	\$13,191	1972	\$20,235	1997	\$26,134
1923	\$18,323	1948	\$13,815	1973	\$19,900	1998	\$27,242
1924	\$16,491	1949	\$16,099	1974	\$19,638	1999	\$27,106
1925	\$16,308	1950	\$16,498	1975	\$20,063	2000	\$26,086
1926	\$16,124	1951	\$16,779	1976	\$20,763	2001	\$26,440
1927	\$15,941	1952	\$18,175	1977	\$20,920	2002	\$25,756
1928	\$15,758	1953	\$18,198	1978	\$21,334	2003	\$25,652
1929	\$15,575	1954	\$17,868	1979	\$20,565	2004	\$24,977
1930	\$15,391	1955	\$17,770	1980	\$20,043	2005	\$25,699
1931	\$17,224	1956	\$18,282	1981	\$21,374	2006	\$25,563
1932	\$19,056	1957	\$20,310	1982	\$22,348	2007	\$25,127
1933	\$17,957	1958	\$21,485	1983	\$23,220	2008	\$23,741
1934	\$16,857	1959	\$21,530	1984	\$23,873	2009	\$23,658
1935	\$15,025	1960	\$20,719	1985	\$23,990	2010	\$24,296
1936	\$13,193	1961	\$19,728	1986	\$25,172		
1937	\$13,559	1962	\$19,612	1987	\$25,695		

Sources:

Compiled by Jacob Ward, Vehicle Technologies Program, U.S. Department of Energy, from the following sources:
Raff, D.M.G. & Trajtenberg, M. (1995), "Quality-Adjusted Prices for the American Automobile Industry: 1906-1940," National Bureau of Economic Research, Inc.; Gordon, R.J. (1990), *The Measurement of Durable Goods Prices*, National Bureau of Economic Research, Inc.; and U.S. Department of Commerce, Bureau of Economic Analysis (2012), National Income and Product Accounts.

Note: Estimations were used for years 1941-1946.



In current dollars, import cars, on average, were less expensive than domestic cars until 1982. Since then, import prices have almost tripled, while domestic prices have more than doubled (current dollars).

Table 10.12
Average Price of a New Car (Domestic and Import), 1970–2010

Year	Domestic ^a		Import		Total	
	Current dollars	Constant 2010 dollars ^b	Current dollars	Constant 2010 dollars ^b	Current dollars	Constant 2010 dollars ^b
1970	3,708	20,839	2,648	14,882	3,542	19,906
1975	5,084	20,606	4,384	17,769	4,950	20,063
1976	5,506	21,100	4,923	18,866	5,418	20,763
1977	5,985	21,536	5,072	18,250	5,814	20,920
1978	6,478	21,665	5,934	19,846	6,379	21,334
1979	6,889	20,691	6,704	20,136	6,847	20,565
1980	7,609	20,136	7,482	19,800	7,574	20,043
1981	8,912	21,379	8,896	21,340	8,910	21,374
1982	9,865	22,291	9,957	22,499	9,890	22,348
1983	10,516	23,023	10,868	23,794	10,606	23,220
1984	11,079	23,252	12,336	25,890	11,375	23,873
1985	11,589	23,486	12,853	26,047	11,838	23,990
1986	12,319	24,509	13,670	27,197	12,652	25,172
1987	12,922	24,804	14,470	27,775	13,386	25,695
1988	13,418	24,733	15,221	28,056	13,932	25,680
1989	13,936	24,507	15,510	27,275	14,371	25,272
1990	14,489	24,173	16,640	27,762	15,042	25,096
1991	15,192	24,322	16,327	26,140	15,475	24,775
1992	15,644	24,314	18,593	28,897	16,336	25,390
1993	15,976	24,108	20,261	30,575	16,871	25,459
1994	16,930	24,910	21,989	32,354	17,903	26,342
1995	16,864	24,129	23,202	33,198	17,959	25,696
1996	17,468	24,277	26,205	36,419	18,777	26,096
1997	17,600	23,911	27,509	37,374	19,236	26,134
1998	18,479	24,721	29,614	39,617	20,364	27,242
1999	19,032	24,910	27,542	36,049	20,710	27,106
2000	19,586	24,802	25,965	32,879	21,041	26,644
2001	20,042	24,677	25,787	31,750	21,474	26,440
2002	18,897	22,905	27,440	33,260	21,249	25,756
2003	19,971	23,667	26,081	30,908	21,646	25,652
2004	18,910	21,829	28,409	32,794	21,646	24,987
2005	21,593	24,109	26,621	29,723	23,017	25,699
2006	22,166	23,975	27,062	29,271	23,634	25,563
2007	22,284	23,435	27,465	28,884	23,892	25,127
2008	22,204	22,488	25,903	26,234	23,441	23,741
2009	22,148	22,511	25,499	25,917	23,276	23,658
2010	23,095	23,095	26,808	26,808	24,296	24,296
<i>Average annual percentage change</i>						
1970–2010	4.7%	0.3%	6.0%	1.4%	4.9%	0.5%
2000–2010	1.7%	-0.7%	0.3%	-2.0%	1.4%	-0.9%

Source:

U.S. Department of Commerce, Bureau of Economic Analysis, *National Income and Product Accounts*, underlying detail estimates for Motor Vehicle Output, Washington, DC, 2012. (Additional resources: www.bea.gov)

^a Includes transplants.

^b Adjusted by the Consumer Price Inflation Index.



The total cost of operating a car is the sum of the fixed cost (depreciation, insurance, finance charge, and license fee) and the variable cost (gas and oil, tires, and maintenance), which is related to the amount of travel. The gas and oil share of total cost was 16.2% in 2011.

Table 10.13
Car Operating Cost per Mile, 1985–2011

Model year	Constant 2011 dollars per 10,000 miles ^a			Total cost per mile ^b (constant 2011 cents ^a)	Percentage gas and oil of total cost	
	Variable cost	Fixed cost	Total cost			
1985	1,551	4,309	5,860	58.60	19.9%	
1986	1,338	4,735	6,073	60.73	15.1%	
1987	1,327	4,610	5,936	59.36	14.7%	
1988	1,502	5,761	7,263	72.63	13.6%	
1989	1,451	5,297	6,748	67.48	14.2%	
1990	1,446	5,604	7,049	70.49	13.2%	
1991	1,602	5,889	7,491	74.91	14.6%	
1992	1,443	6,067	7,510	75.10	12.6%	
1993	1,432	5,794	7,226	72.26	12.7%	
1994	1,381	5,822	7,204	72.04	11.8%	
1995	1,417	5,911	7,328	73.28	11.7%	
1996	1,376	6,011	7,388	73.88	10.9%	
1997	1,514	6,094	7,607	76.07	12.2%	
1998	1,477	6,249	7,725	77.25	11.1%	
1999	1,431	6,292	7,723	77.23	9.8%	
2000	1,594	6,171	7,764	77.64	11.6%	
2001	1,727	5,869	7,597	75.97	13.2%	
2002	1,475	6,094	7,570	75.70	9.7%	
2003	1,601	5,971	7,572	75.72	11.6%	
2004	1,500	6,708	8,208	82.08	9.4%	
2005	1,624	6,233	7,857	78.57	12.0%	
2006	1,685	5,228	6,913	69.13	15.3%	
2007	1,573	5,169	6,742	67.42	14.3%	
2008	1,772	5,641	7,413	74.13	16.4%	
2009	1,617	5,794	7,411	74.11	14.3%	
2010	1,726	5,900	7,625	76.25	15.4%	
2011	1,774	5,857	7,631	76.31	16.2%	
		<i>Average annual percentage change</i>				
1985–2011	0.5%	1.2%	1.0%	1.0%		

Source:

Ward's Communications, *Motor Vehicle Facts and Figures 2011*, Southfield, Michigan, 2011, p. 65, and annual. Original data from AAA "Your Driving Costs." (Additional resources: newsroom.aaa.com)

^a Adjusted by the Consumer Price Inflation Index.

^b Based on 10,000 miles per year.



While the previous table shows costs per mile, this table presents costs per year for fixed costs associated with car operation. For 2011 model year cars, the fixed cost is over \$16 per day.

Table 10.14
Fixed Car Operating Costs per Year, 1975–2011
 (constant 2011 dollars)^a

Model year	Insurance ^b	License, registration & taxes	Depreciation	Finance charge	Total	Average fixed cost per day
1975	1,601	125	3,232	^c	4,959	13.59
1977	1,923	275	3,144	^c	5,341	14.62
1978	1,463	255	3,084	^c	4,802	13.14
1979	1,496	279	2,919	^c	5,611	15.37
1980	1,338	224	2,834	^c	5,550	15.21
1981	1,262	218	3,185	^c	5,877	16.11
1982	1,047	126	3,161	^c	5,590	15.31
1983	1,061	219	2,931	^c	5,407	14.82
1984	1,093	229	2,613	^c	5,079	13.92
1985	972	230	2,638	1,116	4,957	13.59
1986	1,045	267	2,709	1,307	5,328	14.59
1987	1,059	253	2,958	1,042	5,313	14.55
1988	1,090	264	3,392	1,074	5,820	15.95
1989	1,170	261	3,661	1,067	6,159	16.87
1990	1,158	284	4,056	1,170	6,669	18.28
1991	1,169	277	4,135	439	6,021	16.50
1992	1,262	279	4,356	1,276	7,173	19.66
1993	1,158	277	4,405	1,043	6,884	18.87
1994	1,167	294	4,462	984	6,908	18.93
1995	1,156	300	4,536	1,013	7,004	19.19
1996	1,211	308	4,545	1,029	7,094	19.44
1997	1,187	303	4,586	1,076	7,152	19.59
1998	1,242	312	4,642	1,122	7,318	20.05
1999	1,310	305	4,639	1,118	7,372	20.20
2000	1,267	291	4,561	1,109	7,229	19.80
2001	1,259	264	4,506	1,100	7,129	19.53
2002	1,268	251	4,653	1,035	7,207	19.74
2003	1,347	251	4,570	910	7,077	19.39
2004	1,909	494	4,504	882	7,789	21.34
2005	1,483	448	4,468	851	7,250	19.87
2006	1,033	597	3,785	799	6,214	17.03
2007	1,069	584	3,680	795	6,127	16.78
2008	985	579	3,470	792	5,826	15.96
2009	1,023	594	3,629	817	6,063	16.61
2010	1,064	603	3,666	831	6,165	16.89
2011	968	595	3,728	823	6,114	16.75
<i>Average annual percentage change</i>						
1975–2011	-1.4%	4.4%	0.4%	^c	0.6%	0.6%
2001–2011	-2.6%	8.5%	-1.9%	-2.9%	-1.5%	-1.5%

Source:

Ward's Communications, *Motor Vehicle Facts and Figures 2011*, Southfield, Michigan, 2011, p. 65 and annual. Original data from AAA "Your Driving Costs." (Additional resources: newsroom.aaa.com)

^a Adjusted by the Consumer Price Inflation Index.

^b Fire & Theft: \$50 deductible 1975 through 1977; \$100 deductible 1978 through 1992; \$250 deductible for 1993 – on. Collision: \$100 deductible through 1977; \$250 deductible 1978 through 1992; \$500 deductible for 1993 – on. Property Damage & Liability: coverage = \$100,000/\$300,000.

^c Data are not available.



Table 10.15
Personal Consumption Expenditures, 1970–2011
(billion dollars)

Year	Personal consumption expenditures		Transportation personal consumption expenditures		Transportation PCE as a percent of PCE
	Current	Constant 2011 ^a	Current	Constant 2011 ^a	
1970	648.30	3,019.6	80.8	376.3	12.5%
1980	1,755.80	4,164.8	241.7	573.3	13.8%
1990	3,835.50	6,016.9	455.7	714.9	11.9%
2000	6,830.40	8,727.2	814.3	1,040.4	11.9%
2001	7,148.80	8,932.2	829.6	1,036.6	11.6%
2002	7,439.20	9,147.0	832.6	1,023.7	11.2%
2003	7,804.10	9,398.0	873.7	1,052.1	11.2%
2004	8,270.60	9,687.0	927.0	1,085.8	11.2%
2005	8,803.50	9,979.7	998.0	1,131.3	11.3%
2006	9,301.00	10,213.7	1,027.5	1,128.3	11.0%
2007	9,772.30	10,428.6	1,071.7	1,143.7	11.0%
2008	10,035.50	10,477.2	1,055.7	1,102.2	10.5%
2009	9,866.10	10,192.7	903.0	932.9	9.2%
2010	10,245.50	10,464.2	989.7	1,010.8	9.7%
2011	10,726.00	10,726.0	1,111.9	1,111.9	10.4%

Source:

U.S. Department of Commerce, Bureau of Economic Analysis, National Income and Product Accounts, Table 2.3.5, <http://www.bea.gov>

Note: Transportation PCE includes the following categories: transportation, motor vehicles and parts, and gasoline and oil.

Table 10.16
Consumer Price Indices, 1970–2011
(1970 = 1.000)

Year	Consumer price index	Transportation consumer price index ^b	New car consumer price index	Used car consumer price index	Gross national product index
1970	1.000	1.000	1.000	1.000	1.000
1980	2.124	2.216	1.667	1.997	2.702
1990	3.369	3.213	2.286	3.769	5.585
2000	4.438	4.088	2.689	4.994	9.562
2005	5.034	4.637	2.597	4.468	12.176
2007	5.344	4.925	2.566	4.351	13.546
2008	5.549	5.215	2.527	4.293	13.842
2009	5.529	4.780	2.554	4.070	13.488
2010	5.620	5.157	2.599	4.587	14.086
2011	5.797	5.663	2.672	4.776	14.683

Sources:

Bureau of Labor Statistics, Consumer Price Index Table 1A for 2011, and annual.

(Additional resources: www.bls.gov)

GNP – U.S. Department of Commerce, Bureau of Economic Analysis, National Income and Product Accounts, Table 1.7.5. (Additional resources: www.bea.gov)

^a Adjusted by the GNP price deflator.

^b Transportation Consumer Price Index includes new and used cars, gasoline, car insurance rates, intracity mass transit, intracity bus fare, and airline fares.



The data below were summarized from the Bureau of Labor Statistics (BLS) Current Employment Statistics Survey data using the North American Industry Classification System (NAICS). Transportation-related employment was 7.2% of total employment in 2011.

Table 10.17
Transportation-related Employment, 2000 and 2011^a
 (thousands)

	2000	2011	Percent change
Truck transportation (includes drivers)	1,405.8	1,298.9	-7.6%
Transit and ground transportation	372.1	436.1	17.2%
Air transportation	614.4	456.0	-25.8%
Rail transportation	231.7	228.8	-1.3%
Water transportation	56.0	62.5	11.6%
Pipeline transportation	46.0	42.9	-6.7%
Motor vehicle and parts - retail	1,846.9	1,687.9	-8.6%
Motor vehicles and parts - wholesale	355.7	312.2	-12.2%
Gasoline stations - retail	935.7	828.0	-11.5%
Automotive repair and maintenance	888.1	813.1	-8.4%
Automotive equipment rental and leasing	208.3	165.2	-20.7%
Manufacturing	2,143.9	1,434.1	-33.1%
<i>Cars and light trucks</i>	237.4	134.8	-43.2%
<i>Heavy-duty trucks</i>	54.0	24.8	-54.1%
<i>Motor vehicle bodies and trailers</i>	182.7	114.0	-37.6%
<i>Motor vehicle parts</i>	839.5	443.3	-47.2%
<i>Aerospace products and parts</i>	516.7	487.6	-5.6%
<i>Railroad rolling stock & other transportation equipment</i>	72.7	56.6	-22.1%
<i>Ship & boat building</i>	154.1	120.6	-21.7%
<i>Tires</i>	86.8	52.4	-39.6%
Oil and gas pipeline construction	72.2	110.4	52.9%
Highway street and bridge construction	340.1	282.2	-17.0%
Scenic & sightseeing	27.5	28.6	4.0%
Support activities for transportation	537.4	563.9	4.9%
Couriers and messengers	605.0	528.5	-12.6%
Travel arrangement and reservation services	298.6	190.3	-36.3%
Total transportation-related employment	10,985.4	9,469.6	-13.8%
Total nonfarm employment	131,785.0	131,359.0	-0.3%
Transportation-related to total employment	8.3%	7.2%	

Source:

Bureau of Labor Statistics Web site query system: www.bls.gov/ces/cesnaics.htm, (Additional resources: www.bls.gov)

^a Not seasonally adjusted.



The total number of employees involved in the manufacture of motor vehicles decreased by over 56% from 1990 to 2011 and by more than 67% for those involved in the manufacture of motor vehicle parts. Beginning in 2008, the share of production workers fell below 80% for manufacturers of both vehicles and parts.

Table 10.18
U.S. Employment for Motor Vehicles and Motor Vehicle Parts Manufacturing, 1990–2011^a

Year	All employees	Production workers	Share of production workers to total employees
Motor vehicles			
1990	271.4	243.4	89.7%
1991	258.4	234.8	90.9%
1992	259.9	234.0	90.0%
1993	263.7	234.8	89.0%
1994	281.5	250.9	89.1%
1995	294.7	273.7	92.9%
1996	285.3	271.2	95.1%
1997	286.8	273.6	95.4%
1998	283.6	254.8	89.8%
1999	291.3	254.3	87.3%
2000	291.4	251.0	86.1%
2001	278.7	236.4	84.8%
2002	265.4	220.8	83.2%
2003	264.6	217.1	82.0%
2004	255.9	208.0	81.3%
2005	247.6	198.6	80.2%
2006	236.5	191.8	81.1%
2007	220.0	177.3	80.6%
2008	191.6	151.1	78.9%
2009	146.4	114.2	78.0%
2010	152.6	120.7	79.1%
2011	159.6	126.2	79.1%
Motor vehicle parts			
1990	653.0	527.4	80.8%
1991	638.9	514.7	80.6%
1992	661.2	537.0	81.2%
1993	677.8	554.7	81.8%
1994	735.6	606.9	82.5%
1995	786.9	647.7	82.3%
1996	799.9	657.4	82.2%
1997	808.9	662.4	81.9%
1998	818.2	660.3	80.7%
1999	837.1	674.2	80.5%
2000	839.5	676.7	80.6%
2001	774.7	624.9	80.7%
2002	733.6	590.9	80.5%
2003	707.8	567.6	80.2%
2004	692.1	561.6	81.1%
2005	678.1	553.9	81.7%
2006	654.7	533.7	81.5%
2007	607.9	488.9	80.4%
2008	543.7	430.6	79.2%
2009	413.7	317.8	76.8%
2010	418.9	323.3	77.2%
2011	443.4	343.3	77.4%

Source:

Tabulated from the U.S. Department of Labor, Bureau of Labor Statistics, www.bls.gov, May 2012.

^a Not seasonally adjusted.

