

Waterborne Petroleum and the American Economy

Commodities Transported

Petroleum and petroleum products are principal *building block* commodities transported on the Nation's waterways system. On the shallow draft portion of the system, there are about 129 million tons of these commodities shipped on an annual basis, which is about 20 percent of total shallow-draft traffic. These commodities have a market value of more than \$34 billion.

As shown in Table 1, there are eight distinct commodities in this category. Note that fuels (gasoline, distillate fuel oil, residual fuel oil, kerosene and petroleum coke) comprise 106 million tons and have a value of nearly \$28 billion. Fuels account for more than 80 percent of both tons and value.

These fuels, and crude petroleum (another 13 percent of the total tonnage) are absolutely essential to keeping the American economy moving.

Other commodities include lubricating oils and greases. Their importance to the economy is also evident.

Table 1 - Waterborne Petroleum and Products

Commodity	Average Annual Tons	2004 Value
Gasoline	28,062,700	\$11,309,000,000
Distillate Fuel Oil	29,024,800	\$9,201,000,000
Residual Fuel Oil	40,024,200	\$6,964,000,000
Crude Petroleum	16,710,900	\$3,543,000,000
Lube Oil & Greases	3,881,000	\$2,034,000,000
Other Petroleum Products	2,606,800	\$678,000,000
Kerosene	947,200	\$309,000,000
Petro. Jelly & Waxes	13,500	\$7,000,000
Total	121,271,100	\$34,045,000,000

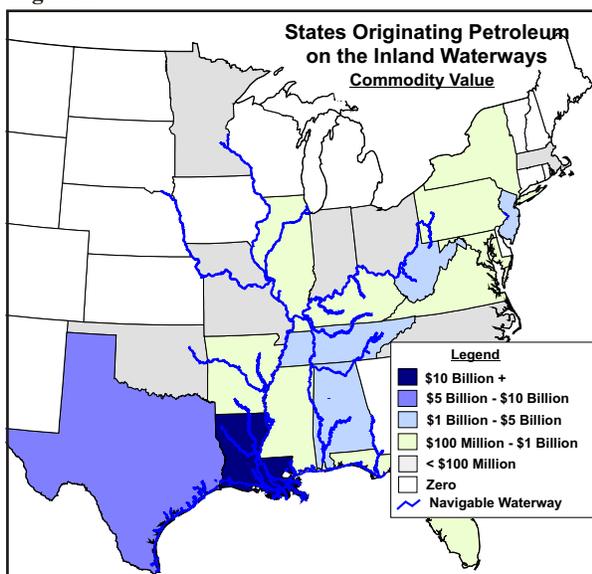
Originating Traffic

Waterborne petroleum and petroleum products are loaded onto shallow draft vessels on the Nation's waterway system in twenty-six states. Table 2 shows the states of origin with annual tons and value of commodities transported. Note that Louisiana and Texas are the leading states of origin, by far. Each has over 35 million tons and about \$10 billion in value of commodities shipped. These two states originate over 60 percent of the total. Other major states of origin are West Virginia, New Jersey, Alabama and Tennessee, each with more than \$1 billion in petroleum shipped.

Table 2 - Originating Waterborne Petroleum

State of Origin	Average Annual Tons	2004 Value
LA	38,951,865	\$10,754,000,000
TX	35,719,509	\$9,660,000,000
WV	5,565,625	\$2,037,000,000
NJ	6,028,879	\$1,847,000,000
AL	4,039,310	\$1,025,000,000
TN	2,727,060	\$1,013,000,000
NY	4,083,345	\$995,000,000
WA	3,926,718	\$953,000,000
PA	2,574,163	\$821,000,000
MS	2,263,990	\$774,000,000
IL	2,270,796	\$658,000,000
VA	1,920,833	\$625,000,000
FL	3,191,270	\$575,000,000
KY	1,112,300	\$379,000,000
OR	1,328,410	\$369,000,000
CA	1,626,878	\$314,000,000
AR	576,379	\$217,000,000
MD	495,760	\$147,000,000
IN	330,432	\$99,000,000
AK	190,966	\$67,000,000
NC	384,776	\$67,000,000
OH	209,570	\$48,000,000
MN	101,358	\$29,000,000
MA	93,821	\$24,000,000
OK	28,972	\$5,000,000
MO	11,231	\$4,000,000

Figure 1



Terminating Traffic

Waterborne petroleum and petroleum products are received via shallow draft vessels in 25 states, as shown in Table 3.

Texas and Louisiana are also the leading states for received petroleum and petroleum products (each with more than 33 million tons and over \$8 billion in value), accounting for 52 percent of received commodities.

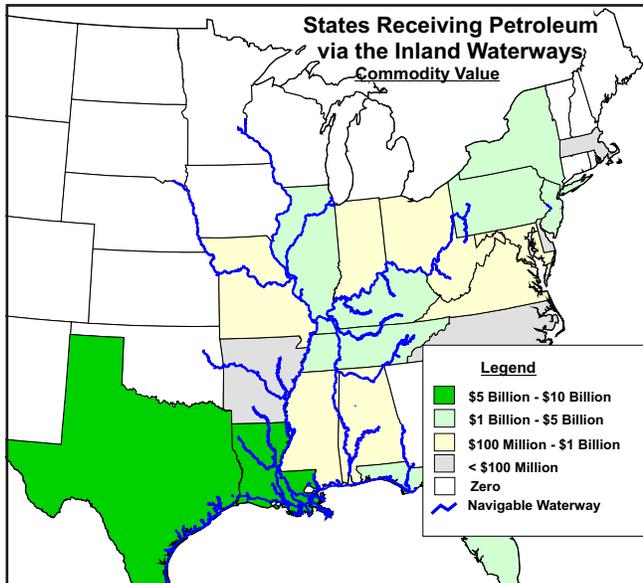
Kentucky is third with \$2.7 billion worth of petroleum received.

There are seven other states – New York, Washington, New Jersey, Tennessee, Florida, Illinois and Pennsylvania – which receive more than \$1 billion worth of these commodities via the domestic shallow-draft waterway system.

Table 3 - Terminating Waterborne Petroleum

Destination State	Average Annual Tons	2004 Value
TX	33,492,618	\$9,211,000,000
LA	33,229,879	\$8,236,000,000
KY	7,356,547	\$2,714,000,000
NY	5,838,860	\$1,709,000,000
WA	5,201,488	\$1,384,000,000
NJ	4,267,669	\$1,228,000,000
TN	3,301,579	\$1,223,000,000
FL	4,729,174	\$1,206,000,000
IL	2,939,338	\$1,028,000,000
PA	3,178,510	\$1,008,000,000
MS	3,205,254	\$937,000,000
AL	2,898,194	\$693,000,000
IN	1,892,368	\$677,000,000
WV	1,682,692	\$582,000,000
OH	1,190,750	\$444,000,000
MD	1,154,351	\$400,000,000
MO	979,053	\$374,000,000
VA	1,237,346	\$360,000,000
CA	1,626,878	\$314,000,000
OR	547,844	\$133,000,000
AK	324,291	\$116,000,000
AR	261,555	\$88,000,000
NC	393,588	\$68,000,000
DE	142,315	\$25,000,000
MA	90,522	\$23,000,000

Figure 2



Economic Analysis

The value of petroleum and petroleum products moved by inland waterway – over \$34 billion – can be used in conjunction with input-output data and analysis to estimate its importance to the American economy. Using this form of economic analysis, output and jobs in the petroleum and petroleum products industries, and in industries directly and indirectly linked to these industries, have been estimated. Corresponding value added totals and aggregate tax revenues have also been estimated.

The results are as follows:

There are 528,500 jobs directly associated with the production and consumption of petroleum and petroleum products transported on the inland waterways.

The Direct Output (a measure of business activity, similar to sales) that results from these 528,500 jobs has a value of \$123.3 billion.

The total number of associated jobs is 1,975,000, which includes indirectly linked jobs (in industries that directly and indirectly buy from and sell to any associated industries, including industries associated through employee expenditures).

The Total Output associated with these 1,975,000 jobs amounts to \$328.2 billion.

Direct Value Added is \$34.7 billion, while the Total Value Added is nearly \$144.2 billion. Value Added is used by economists as a measure of the increase in the value of goods as a result of the production process. Value Added is sales less the cost of intermediate goods (materials) and services.

Impacted Industries

The analysis also shows output and employment associated with waterborne petroleum and products in each of the 505 industries which comprise the American economy, some of which are much more heavily impacted than others.

Table 4 shows the twenty most strongly linked industries in terms of employment. Note that the directly linked industries are those which are highly dependent on the use of fuel. Truck transportation, couriers and air transportation are most prominent.

There are 51 separate industries with more than 10,000 jobs associated with waterway transportation of petroleum and petroleum products.

Note from Table 4 that several of the most strongly linked industries are not often associated with waterborne commerce. They show up because they are major factors in the American economy and are linked to activity in many other industries.

Table 4 - Most Strongly Linked Industries - Employment (Jobs)

Industry	Employment (Jobs)	
	Direct	Total
Truck transportation	134,163	166,779
Cattle ranching and farming	75,071	100,779
Food services and drinking places	0	96,680
Couriers and messengers	65,402	76,135
Wholesale trade	0	75,622
Air transportation	51,677	56,300
Highway- street- bridge- and tunnel construction	49,169	49,169
Oil and gas extraction	5,981	46,564
Employment services	0	42,967
Real estate	0	40,744
Waste management and remediation services	27,842	35,154
Automotive repair and maintenance- except car wash	0	34,253
Hospitals	0	31,668
Other new construction	30,491	30,491
Offices of physicians- dentists- and other health	0	29,533
Management of companies and enterprises	0	25,808
Food and beverage stores	0	24,517
Scenic and sightseeing transportation and support	0	23,299
General merchandise stores	0	22,923
Architectural and engineering services	0	21,602

The twenty highest industries in terms of output associated with waterborne petroleum are listed in Table 5.

Note that in terms of output, petroleum refineries are most strongly linked with nearly twice the output of the next most highly linked industry.

Various industries (Truck Transportation, Air Transportation, Couriers), which are heavily dependent on fuels, are prominent in terms of both direct and total impacts.

Several of the most highly linked industries per Table 5 – Real Estate; Lessors of Intangible Assets; Hospitals – are not often associated with waterborne commerce. They are prominent because of indirect linkages to many of the directly associated industries.

Output impacts are spread widely through the economy. There are 50 industries with associated Total Output of greater than \$1 billion.

Table 5 - Most Strongly Linked Industries - Output

Industry	Output (\$ Million)	
	Direct	Total
Petroleum refineries	\$48,865	\$55,317
Oil and gas extraction	\$3,638	\$28,325
Truck transportation	\$17,977	\$22,348
Wholesale trade	\$0	\$11,380
Air transportation	\$10,271	\$11,190
Cattle ranching and farming	\$5,636	\$7,566
Real estate	\$0	\$6,858
Couriers and messengers	\$5,604	\$6,524
Lessors of nonfinancial intangible assets	\$0	\$6,361
Other basic organic chemical manufacturing	\$5,180	\$6,299
Owner-occupied dwellings	\$0	\$5,928
Waste management and remediation services	\$4,410	\$5,568
Support activities for oil and gas operations	\$0	\$5,107
Automotive repair and maintenance- except car wash	\$0	\$5,085
Pipeline transportation	\$3,557	\$5,050
Highway- street- bridge- and tunnel construction	\$5,015	\$5,015
Monetary authorities and depository credit interme	\$0	\$4,413
Food services and drinking places	\$0	\$4,189
Insurance carriers	\$0	\$4,025
Hospitals	\$0	\$3,912

Industrial Sectors

It is also useful to group the results for individual into industrial sectors.

Table 6 shows the distribution of jobs associated with waterborne petroleum and petroleum products by industrial sector. The sector which includes Transportation and Warehousing leads with more than 366,000 associated jobs, which is more than two times as much as any other sector. Nearly 260,000 of these jobs are directly associated with waterborne petroleum.

Agriculture is the next highest sector with 182,600 jobs associated with waterborne petroleum.

The Manufacturing, Retail Trade, and Administrative & Waste Services sectors follow.

Table 6 - Employment (Jobs) by Industrial Sector

Industrial Sector	Employment (Jobs)	
	Direct	Total
Agriculture, Forestry, Fishing & Hunting	93,519	182,619
Mining	5,981	71,069
Utilities	1,934	9,042
Construction	89,350	103,138
Manufacturing	34,941	149,810
Wholesale Trade	0	75,622
Transportation & Warehousing	257,177	366,401
Retail Trade	0	145,141
Information	0	35,402
Finance & Insurance	0	81,586
Real Estate & Rental	0	55,307
Professional - Scientific & Tech Services	0	108,429
Management of Companies	0	25,808
Administrative & Waste Services	27,842	144,196
Educational Services	0	23,535
Health & Social Services	0	117,652
Arts - Entertainment & Recreation	0	29,977
Accomodation & Food Services	0	109,803
Other Services	0	109,073
Government & Other	17,745	31,651
Total	528,489	1,975,260

The Direct and Total Output associated with shipped and received waterborne petroleum and petroleum products, by industrial sector, are given in Table 7.

Note that in terms of output, Manufacturing is the most highly associated sector by far. Direct Output for the Manufacturing Sector is more than \$61 billion, while Total Output is nearly \$96 billion.

The Transportation & Warehousing Sector follows with Direct Output of \$37 billion and Total Output of nearly \$50 billion.

Taxes

The analysis also resulted in rough estimates of tax payments tied to waterborne petroleum and petroleum products.

The taxes paid in association with all linked activities amount to about \$24 billion in federal taxes and \$15 billion in state and local taxes, for a grand total of roughly \$39 billion in tax payments associated with petroleum and petroleum products.

Table 7 - Output by Industrial Sector

Industrial Sector	Output (\$ Million)	
	Direct	Total
Agriculture, Forestry, Fishing & Hunting	\$6,499	\$12,233
Mining	\$3,638	\$34,398
Utilities	\$1,006	\$5,050
Construction	\$7,981	\$9,242
Manufacturing	\$61,469	\$95,816
Wholesale Trade	\$0	\$11,380
Transportation & Warehousing	\$37,409	\$50,991
Retail Trade	\$0	\$8,025
Information	\$0	\$8,212
Finance & Insurance	\$0	\$14,922
Real Estate & Rental	\$0	\$15,406
Professional - Scientific & Tech Services	\$0	\$11,394
Management of Companies	\$0	\$3,407
Administrative & Waste Services	\$4,410	\$11,336
Educational Services	\$0	\$1,183
Health & Social Services	\$0	\$10,126
Arts - Entertainment & Recreation	\$0	\$1,542
Accommodation & Food Services	\$0	\$5,229
Other Services	\$0	\$9,381
Government & Other	\$878	\$8,964
Total	\$123,290	\$328,237

Table 8 - Associated Tax Payments

	Taxes Paid (\$Million)	
Federal Government		
Corporate Profits Tax	\$2,375	
Indirect Bus Tax: Custom Duty	\$364	
Indirect Bus Tax: Excise Taxes	\$1,171	
Indirect Bus Tax: Fed NonTaxes	\$413	
Personal Tax: Estate and Gift Tax	\$0	
Personal Tax: Income Tax	\$9,959	
Personal Tax: NonTaxes (Fines- Fees	\$106	
Social Ins Tax- Employee Contribution	\$5,198	
Social Ins Tax- Employer Contribution	\$4,579	
Total - Federal Government		\$24,165
Corporate Profits Tax	\$406	
Dividends	\$6	
Indirect Bus Tax: Motor Vehicle Lic	\$97	
Indirect Bus Tax: Other Taxes	\$599	
Indirect Bus Tax: Property Tax	\$4,545	
Indirect Bus Tax: S/L NonTaxes	\$712	
Indirect Bus Tax: Sales Tax	\$5,672	
Indirect Bus Tax: Severance Tax	\$108	
Personal Tax: Estate and Gift Tax	\$0	
Personal Tax: Income Tax	\$2,177	
Personal Tax: Motor Vehicle License	\$124	
Personal Tax: NonTaxes (Fines- Fees	\$417	
Personal Tax: Other Tax (Fish/Hunt)	\$31	
Personal Tax: Property Taxes	\$47	
Social Ins Tax- Employee Contribution	\$26	
Social Ins Tax- Employer Contribution	\$95	
Total - State / Local Government		\$15,063
Grand Total		\$39,228

Conclusion

This analysis shows the extent to which petroleum and petroleum products transported in shallow draft vessels on the Nation's waterways system support economic activity throughout the industries that make up the American economy.

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