
Office of Transportation Analysis

America's Leading Seaports

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America's Leading Seaports - Abstract

- Highways, railways, and waterways radiate from U.S. seaports.
- Seaports are gateways for international freight transported by water and domestic goods moved by truck or rail to and from distribution centers, factories, or retail stores.
- Economic recession appears to have had an impact, particularly on the balance of trade. Seaports compete with one and another for cargo, but there's a degree of specialization.
- Data and statistics from Federal statistical and Marine transportation system-related agencies, such as vessel value and weight, can measure performance. However, it takes foresight.



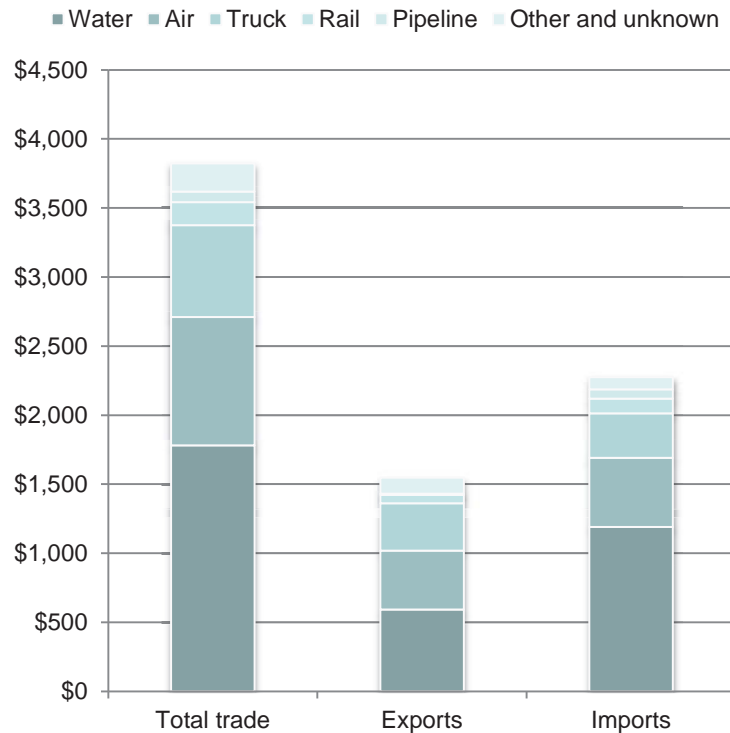
SOURCE: Matthew Chambers

America's Leading Seaports - Highlights

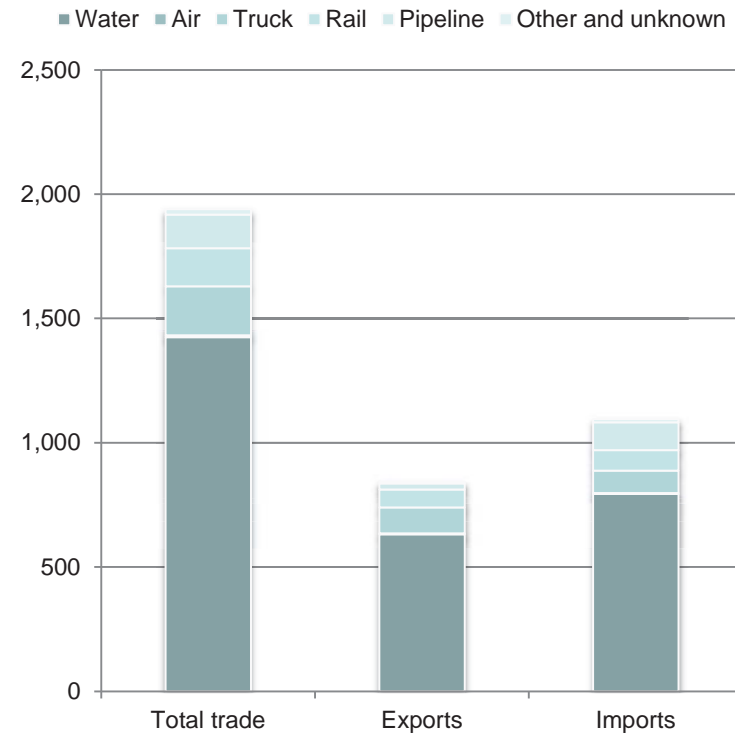
Topics	
U.S.-International Trade & Water Transportation	<ul style="list-style-type: none"> ▪ Vessels such as bulkers, tankers, and most importantly containerships carried the largest share of total U.S. trade by value. ▪ They carried about 4/5ths of U.S. exports and nearly half of U.S. imports, making U.S. seaports the leading freight gateways.
Recessional Recovery & Trade Imbalance	<ul style="list-style-type: none"> ▪ Total trade, including by vessel and multimodal container, dropped significantly during the last recession. ▪ The <i>value</i> gap between U.S. export and imports has narrowed. Likewise, U.S. export <i>weight</i> is increasing, import weight is decreasing.
Measuring & Ranking U.S. Seaports	<ul style="list-style-type: none"> ▪ U.S. seaports account for 4 out of the top 5 freight transportation gateways. Cargo appears concentrated, funneling through a few ports. ▪ However, leading U.S. seaports vary by measure or ranking (e.g., weight, value, or cargo type/unit of measure).
Port Resiliency & Case Studies	<ul style="list-style-type: none"> ▪ Data and statistics can help measure the impact of accidents and natural disasters that impact U.S. seaports. ▪ Statistical methods and analytical tools can foster understanding.

International Trade & Water Transportation

Value (in billions of current U.S. Dollars)



Weight (in millions of short tons)



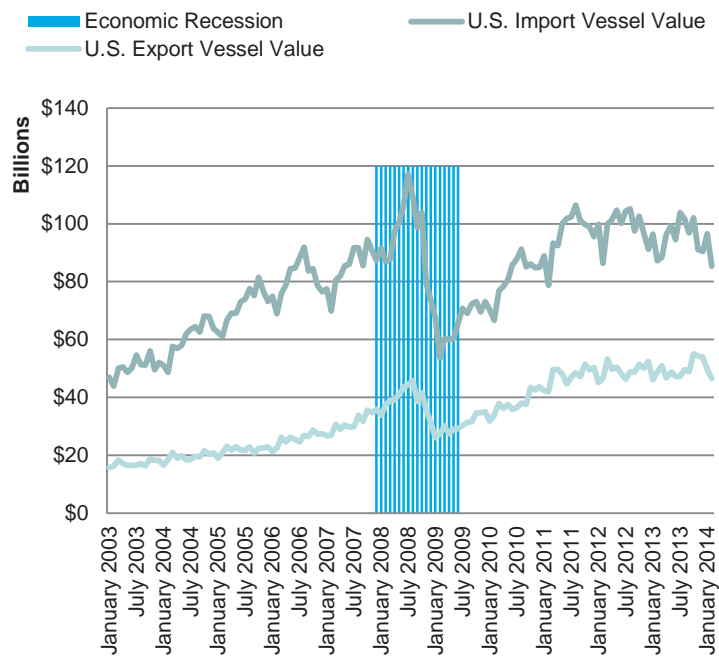
U.S. seaports were the leading international freight gateways, handling about 1/2 the value and 3/4 of the tonnage.

SOURCES: *Total, water and air data:* U.S. Department of Commerce, U.S. Census Bureau, Foreign Trade Division, *FT920 - U.S. Merchandise Trade: Selected Highlights* (Washington, DC: February 2013). *Truck, rail, pipeline, and other and unknown data:* U.S. Department of Transportation, Bureau of Transportation Statistics, North American TransBorder Freight Data, available at www.bts.gov/transborder as of October 2013.

International Trade & Water Transportation

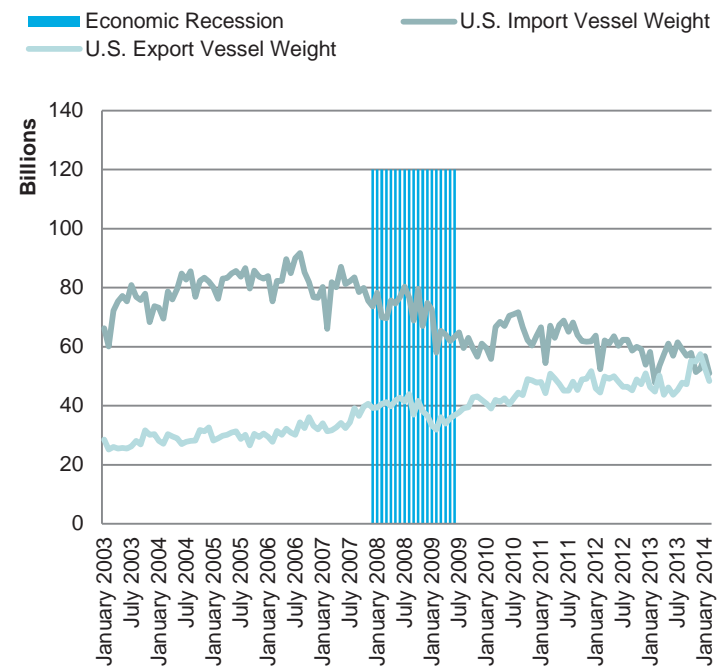
U.S. Export & Import Value

U.S. Import and Export Vessel Value:
January 2003-January 2014



U.S. Export & Import Weight

U.S. Import and Export Vessel Weight:
January 2003-January 2014

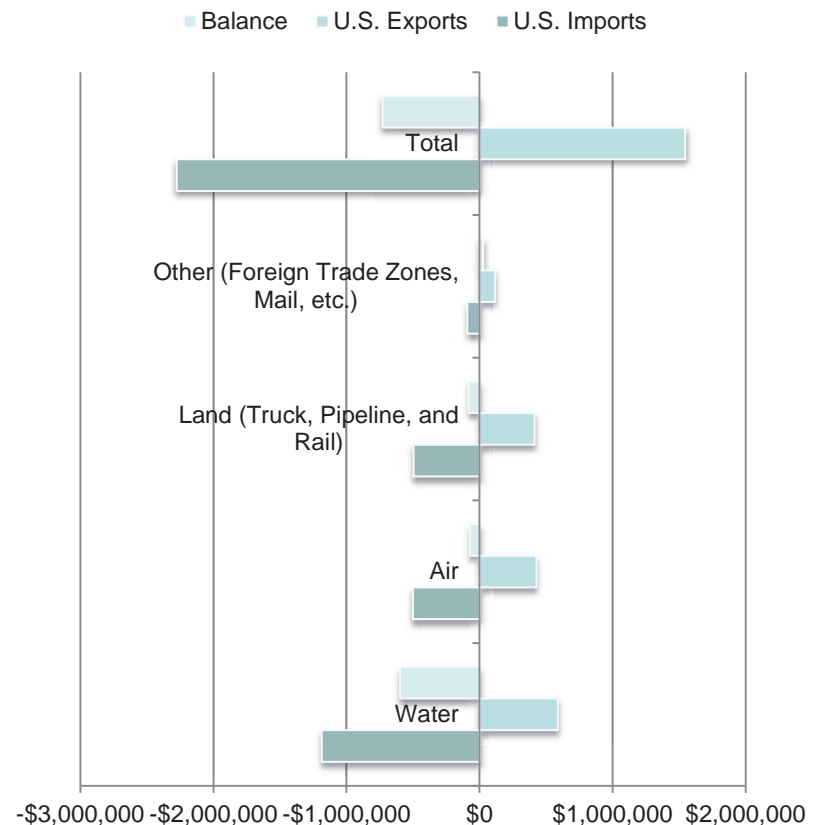


U.S. Export & Import Value shifted downward during the December 2007-June 2009 economic recession, but has since rebounded. Most notably, **U.S. Import Weight** trended downward, whereas **U.S. Export Weight** rose.

Recessional Recovery & Trade Imbalance

- In 2012, according to the U.S. Census Bureau, the U.S. trade deficit in goods on a balance of payments basis decreased to \$741,475 million from \$838,788 million in 2006.
- The United States imports about 50 percent more than it exports.
- The *Water* modes account for the majority of the trade imbalance.

Balance of Trade by Mode of Transportation
(in millions of current dollars): 2012



SOURCES: Total, Air, U.S. Exports, and U.S. Imports: U.S. Department of Commerce, Census Bureau, Foreign Trade Division, FT920: U.S. Merchandise Trade: Selected Highlights, Exhibits 1a & 4a, available at <http://www.census.gov/foreign-trade/Press-Release/2012pr/12/ft920/> as of January 2014. **Vessel:** U.S. Army Corps of Engineers, Navigation Data Center, Personal Communications, January 2014. **Land:** U.S. Department of Transportation, Bureau of Transportation Statistics (BTS), TransBorder Freight Data. Available at http://transborder.bts.gov/programs/international/transborder/TBDR_QA.html as of January 2014. **Other:** Calculated by the BTS based upon the sources above.

Recessional Recovery & Trade Imbalance

2012	Country	Exports (billions)	Imports (billions)	Total Trade (billions)	%
1	Canada	\$292.4	\$324.2	\$616.7	16.1
2	China	\$110.6	\$425.6	\$536.2	14.0
3	Mexico	\$216.3	\$277.7	\$494.0	12.9
4	Japan	\$70.0	\$146.4	\$216.4	5.7
5	Germany	\$48.8	\$108.5	\$157.3	4.1
6	United Kingdom	\$54.8	\$54.9	\$109.8	2.9
7	South Korea	\$42.3	\$58.9	\$101.2	2.6
8	Brazil	\$43.7	\$32.1	\$75.8	2.0
9	Saudi Arabia	\$18.1	\$55.7	\$73.8	1.9
10	France	\$30.8	\$41.6	\$72.4	1.9
---	Other	\$619.3	\$749.4	\$1,368.6	35.9
---	Total	\$1,547.1	\$2,275.0	\$3,822.2	100.0

Much of U.S.-international trade is dependent on water transportation, such as trade with China, Japan, and Germany. The United States exports more to Canada than any other country, but land modes carry the majority of this cargo. More U.S. imports come from China than from any other country.

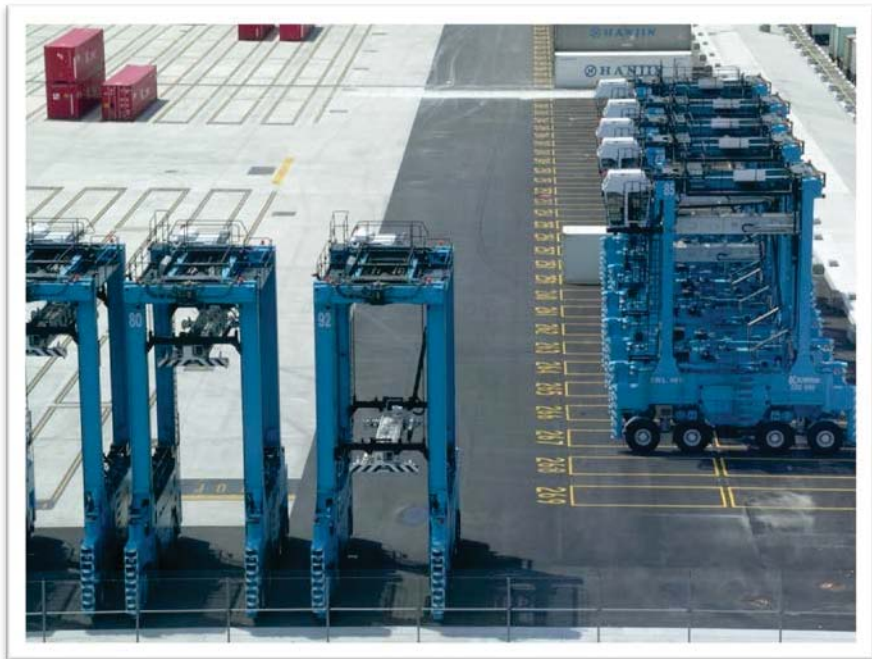
Measuring & Ranking U.S. Seaports

2012 Rank	2008 Rank	Move	Port	Mode	2012 (billion)	2008 (billion)	Change
1	1	0	Los Angeles, CA	Water	\$ 216.9	\$ 209.09	\$ 7.81
2	2	0	New York, NY/NJ	Water	\$ 209.6	\$ 134.82	\$ 74.78
3	3	0	John F. Kennedy International Airport, NY	Air	\$ 182.7	\$ 82.45	\$ 100.25
4	4	0	Houston, TX	Water	\$ 176.5	\$ 78.87	\$ 97.63
5	8	3	Long Beach, CA	Water	\$ 167.3	\$ 59.94	\$ 107.36
6	6	0	Laredo, TX	Land	\$ 163.4	\$ 61.83	\$ 101.57
7	5	-2	Detroit, MI	Land	\$ 130.9	\$ 53.71	\$ 77.19
8	7	-1	Chicago, IL	Air	\$ 117.5	\$ 61.36	\$ 56.14
9	11	2	Los Angeles International Airport, CA	Air	\$ 85.3	\$ 36.97	\$ 48.33
10	10	0	Buffalo-Niagara Falls, NY	Land	\$ 83.1	\$ 40.51	\$ 42.59

In 2012 U.S. seaports accounted for 4 out of the top 5 freight transportation gateways by value. Long Beach moved to 5th place in 2012 from 8th in 2008.

Measuring & Ranking U.S. Seaports

- U.S. seaport rankings vary by data source and measure, including:
 - Vessel value or weight,
 - Commodities,
 - Trading partners,
 - Vessel calls and type,
 - Vehicles (CEUs),
 - Containerized value or weight,
 - Twenty-foot equivalent units (TEUs).
- For instance, based upon vessel calls, there appears to be a degree of port **specialization** with:
 - Ro-Ro calling in Baltimore,
 - Tankers in Houston,
 - Containerships LA/LB or NY/NJ.



SOURCE: Matthew Chambers

Measuring & Ranking U.S. Seaports

Short Tons

Seaport	Exports	+	Imports	=	Total
Houston, TX	78,627,053		83,816,269		162,443,322
South Louisiana, LA	84,215,716		35,133,596		119,349,312
New York, NY and NJ	24,165,189		62,799,784		86,964,973
Long Beach, CA	24,584,469		41,215,516		65,799,985
Los Angeles, CA	21,974,579		32,894,905		54,869,484
Beaumont, TX	9,069,011		40,615,037		49,684,048
Corpus Christi, TX	14,822,051		30,878,967		45,701,018
Norfolk, VA	31,550,120		8,899,896		40,450,016
Other U.S. Seaports	318,853,814		373,755,069		692,608,883
Total	607,862,002		710,009,039		1,317,871,041

Current Dollars

Seaport	Exports	+	U.S. Imports	=	Total
Los Angeles, CA	\$ 44,227,649,864		\$ 172,660,261,531		\$ 216,887,911,395
New York, NY and NJ	\$ 56,241,796,133		\$ 153,315,760,572		\$ 209,557,556,705
Houston, TX	\$ 92,960,988,617		\$ 83,519,454,151		\$ 176,480,442,768
Long Beach, CA	\$ 34,238,536,665		\$ 133,085,474,738		\$ 167,324,011,403
Savannah, GA	\$ 32,417,454,801		\$ 42,740,114,463		\$ 75,157,569,264
Norfolk, VA	\$ 30,299,923,505		\$ 35,606,875,767		\$ 65,906,799,272
Charleston, SC	\$ 23,409,446,190		\$ 40,223,704,808		\$ 63,633,150,998
Baltimore, MD	\$ 21,759,724,913		\$ 32,097,067,376		\$ 53,856,792,289
Other U.S. Seaports	\$ 252,912,630,566		\$ 492,662,472,910		\$ 745,575,103,476
Total	\$ 588,468,151,254		\$ 1,185,911,186,316		\$ 1,774,379,337,570

Port Resiliency & Case Studies

- U.S. seaport resiliency has been tested in recent years by manmade accidents and natural disasters.
- Such events and their aftermaths can be measured using data and statistics. In addition, their recovery can be assessed.
- Measures may show immediate short- and lingering long-term effects:
 - Hurricane Katarina damaged critical infrastructure, particularly the levees, resulting in significant flooding.
 - Hurricane Sandy caused widespread power outages and fuel shortages in the New York metropolitan area.

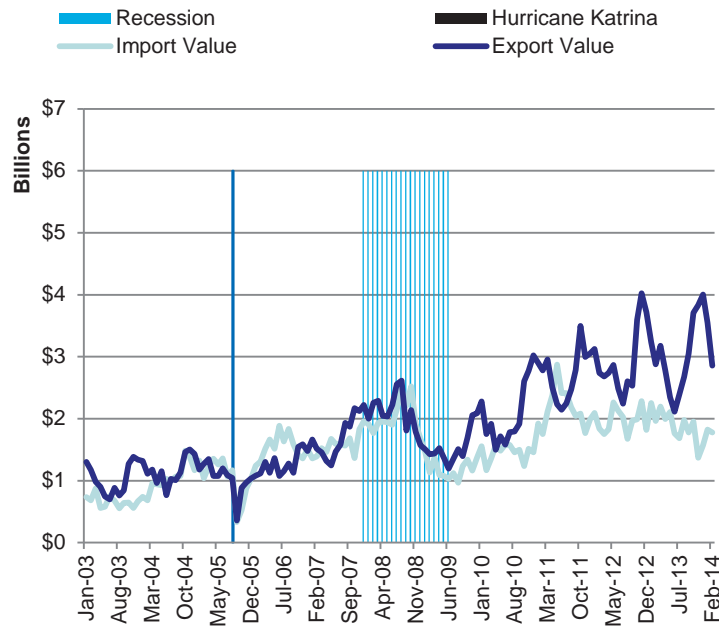


SOURCE: NASA Goddard Space Flight Center, *Earth Observatory*, available at <http://earthobservatory.nasa.gov/> as of May 2014.

Case Study: Port of New Orleans, LA

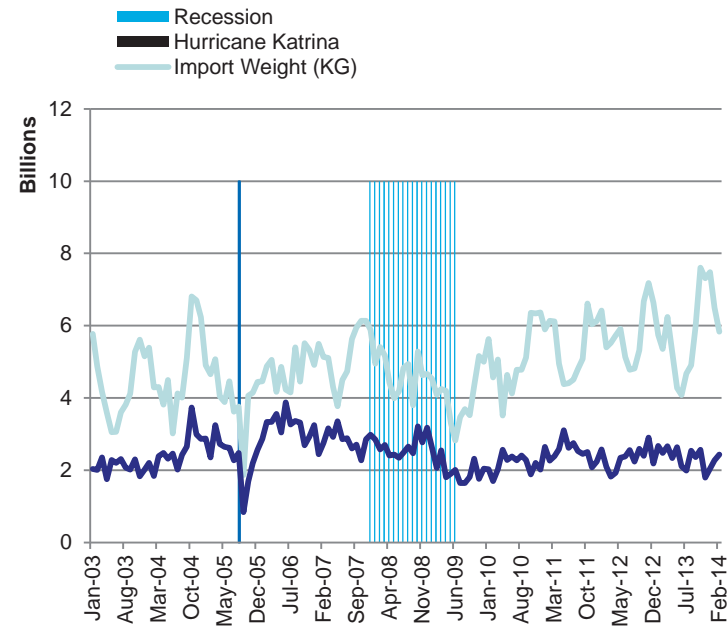
U.S. Export & Import Value

Customs Port of New Orleans, LA Import and Export Value (in current dollars): January 2003-January 2014



U.S. Export & Import Tonnage

Customs Port of New Orleans, LA Import and Export Weight January 2003-January 2014

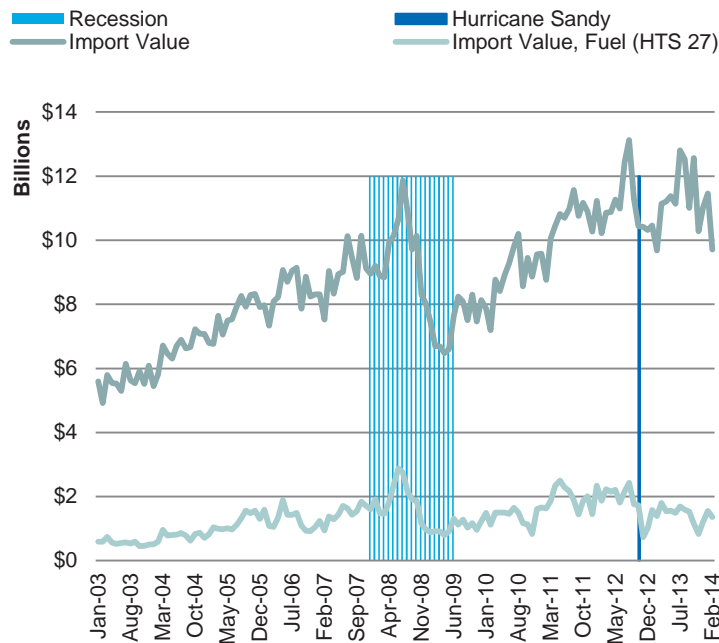


A clear low from the Hurricane Katrina in August 23-30, 2005, and then downwards shift during the December 2007-June 2009 Economic Recession.

Case Study: Customs Port of Newark, NJ

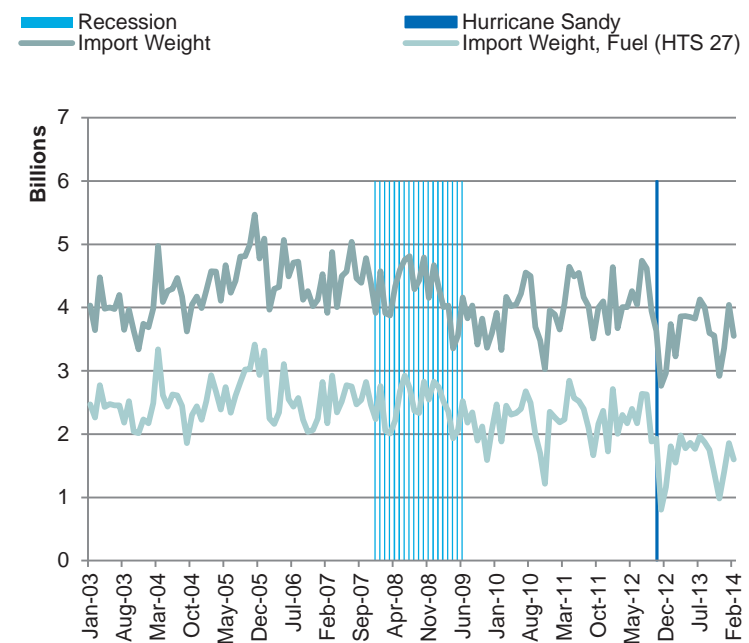
U.S. Import Value

Customs Port of Newark, NJ Total and Fuel (HTS 27)
Import Value (in current dollars):
January 2003-January 2014



U.S. Import Weight

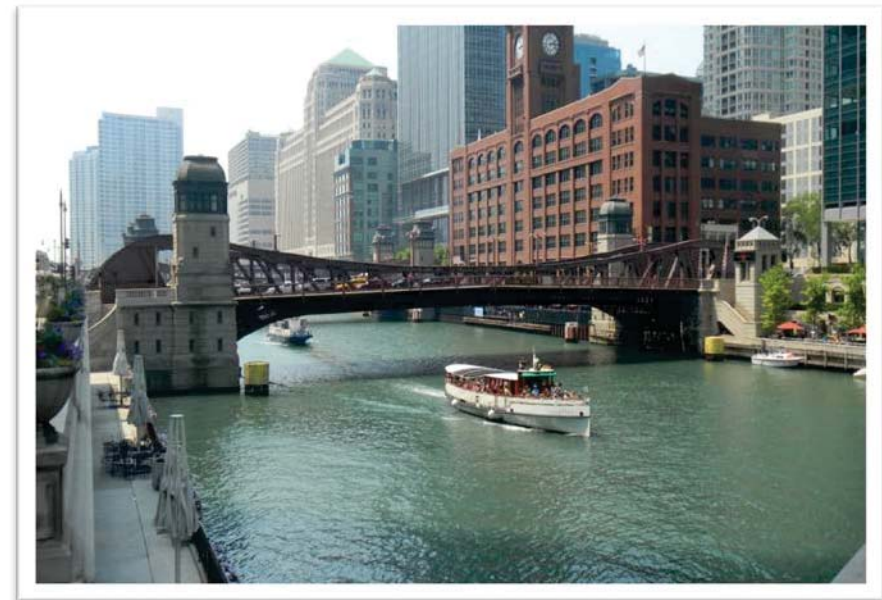
Customs Port of Newark, NJ Total and Fuel (HTS 27)
Import Weight (in Kilograms):
January 2003-January 2014



Value shifted downward during the December 2007-June 2009 economic recession, plus *Weight* after Hurricane Sandy in October 22-29, 2012

Case Studies - Drawing Conclusions

- Factors such as commodities define their market.
- Statistical methods and tools help discern between signal and noise:
 - Currency Fluctuations/Deflators
 - *Price Indices* – Bureau of Labor Statistics' Import/Export Price Indexes
 - Seasonality/Trends
 - *Seasonal Adjustment* – Census Bureau's X-12-ARIMA
- The statistical methods and analytical tools can help one draw a clear conclusion.



SOURCE: Matthew Chambers

America's Leading Seaports - Conclusion

- Seaports are the leading U.S.-international freight gateways in terms of value and tonnage.
- Economic recession has impacted maritime trade and transportation, particularly the balance of trade.
- Measures may gauge competition and flexibility such as the affects of natural disasters and their aftermaths.
- One must find the right measures, especially since they can help paint a vibrant picture.



SOURCE: Matthew Chambers