Industry Overview
The inland barge industry is a critical component of the U.S. supply chain.

### Industry Snapshot
- Water transportation, which includes coastwise, inland, and lakewise movements, represents 11% of all U.S. freight ton-miles and is the most economically viable method of transportation for many commodities.
- The U.S. inland barge market, also known as the “Brown Water” market, moves nearly 600 million tons of cargo each year, valued at more than $200 billion.
- Brown Water transportation companies move dry and liquid cargo to and from 38 states throughout the nation’s heartland and Pacific Northwest, serving industrial and agricultural centers, and facilitating imports and exports at gateway ports on the Gulf Coast.
- In addition to being more cost efficient, Brown Water transportation is also more fuel efficient, environmentally friendly, and safer than truck or rail transportation.
- The inland barge industry is insulated from foreign competition by the Merchant Marine Act of 1920, also known as the Jones Act, which requires that all vessels engaged in the transportation of cargo and passengers between U.S. ports are:
  - Owned and operated by U.S. organized companies that are controlled and at least 75% owned by U.S. citizens.
  - Built at U.S. shipyard without subsidies.
  - Registered under the U.S. flag.
  - Manned by crews that are citizens of the U.S.
- Management believes that the Brown Water market, while currently protected by the Jones Act, would not be materially impacted by a repeal of the Jones Act due to the inferior economics of manufacturing and transporting barges from abroad and barriers to operating in inland waterways over extended period with foreign crews.

### Industry Segmentation
**Products and Services**
- **Towing and Tugboat Services**: 39%
- **Liquid**: 33%
- **Dry**: 24%
- **Passenger**: 4%

**Major Markets**
- **Petroleum and Chemical**: 51%
- **Agricultural**: 18%
- **Coal and Iron Ore**: 17%
- **Consumers**: 7%
- **Other**: 19%

### The U.S. Inland Waterways
- The U.S. Inland Waterways consist of the Mississippi, Ohio, Illinois Rivers and their major tributaries as well as the Gulf Intracoastal Waterway.
- Encompasses nearly 12,000 miles of waterways connecting 38 states.

Source: IBIS.

(1) Segmentation breakdown based on industry revenue.
Stable Industry That Moves a Diverse Mix of Commodities

Diversity of commodities transported on the Inland Waterways provides greater cash flow certainty for barge operators.

- The supply and demand characteristics of the commodities transported by barge are not, for the most part, significantly correlated to each other.
- The diversity of products moved allows for more consistent demand patterns for barge transportation through economic cycles, harvest patterns, and U.S. energy market fluctuations.

**Commodity Movements by Barge Type**

- **Liquid Tank Barges**
  - A tank barge can hold 10,000 to 30,000 barrels of liquids.
  - Tows usually consist of one towboat and between two and six barges; as a result, a tow of tank barges can transport between 20,000 and 150,000 barrels.

- **Dry Hopper Barges**
  - A hopper barge can hold 1,500 to ~2,000+ tons of cargo.
  - Tows usually consist of one towboat and between 15 and 45 barges.

**Commodities Moved by Tank Barges**

- Sodium Hydroxide: 8%
- Alcohols: 4%
- Gasoline: 9%
- Crude: 11%
- Distillate Fuel Oil: 17%
- Other Petroleum: 18%
- Other Chemical Products: 4%
- Other: 22%

**Commodities Moved by Covered Hoppers**

- Other Grain & Agriculture: 15%
- Wheat: 11%
- Chemical Products: 10%
- Minerals: 5%
- Metals: 17%
- Corn: 27%
- Soybeans: 17%
- Other: 3%

**Commodity Type**

- Grain
- Chemicals
- Petrochemical Corridor
- Petroleum Products
- Imports
- Coal
- Steel Capital of America
- Other Dry Cargo

Barging Represents the Most Attractive Mode of Transportation

In addition to being significantly more cost effective, barge transportation is more energy efficient, environmentally friendly, and safer than other leading modes of transportation.

### Most Cost Effective
- **BARGE**: $0.97 per ton mile
- **RAIL**: $2.53 per ton mile
- **TRUCK**: $5.35 per ton mile

### Most Fuel Efficient
- **BARGE**: 0.01116 Ton-miles Traveled per Gallon of Fuel
- **RAIL**: 0.01737 Ton-miles Traveled per Gallon of Fuel
- **TRUCK**: 0.04621 Ton-miles Traveled per Gallon of Fuel

### Most Environmentally Friendly
- **BARGE**: PM 0.01116, HC 0.01737, CO 0.04621, NOx 0.46907 Grams per ton-miles
- **RAIL**: PM 0.01621, HC 0.02423, CO 0.06445, NOx 0.65423 Grams per ton-miles
- **TRUCK**: PM 0.018, HC 0.020, CO 0.136, NOx 0.732 Grams per ton-miles

PM = Particulate matter; HC = Hydrocarbons; CO = Carbon Monoxide; NOx = Nitrogen Oxides

### Safest
- **Fatalities**: BARGE 1, RAIL 22.7, TRUCK 155
- **Injuries**: BARGE 1, RAIL 125.2, TRUCK 3.86
- **Spills**: BARGE 3.60, RAIL 3.86, TRUCK 6.06

**Rate of Spills in Gallons per Million Ton-miles**

Barging is favorably positioned to capture incremental freight demand due to its superior economics, available capacity, and supply constraints in alternative modes of transportation.

**Barging Positioned for Substantial Growth**

- As freight demand continues to grow, capacity issues within the pipeline and rail industries and congestion and driver shortages within the trucking industry, all put considerable strain on the ability of these modes of transportation to meet existing and future demand, providing a significant opportunity for barge industry growth.

- Barge freight transportation is well-positioned to absorb surplus freight demand due to its superior economics and ample capacity on the U.S. Inland Waterways (~60% available capacity).

- Given the size of the truck, rail, and pipeline industries (~$270bn), a relatively small shift in market share away from those modes could translate into substantial revenue growth for the inland barge transportation industry.

**Truck**
- Over the next 20 years, there will be a 25% increase in overall vehicle traffic and a 60% increase in large commercial trucks.
- Trucking industry congestion costs totaled ~$9 billion in 2013, with much of it passed through to customers in the form of higher costs.
- Increasing costs of equipment, driver shortages, and decreasing hours of service further undermining the economics of truck transportation.

**Rail**
- The increase in crude movements, combined with increased demand for agricultural products and intermodal shipments has created meaningful congestion and capacity choke points along the domestic freight-rail system.
- Domestic freight volumes by rail are expected to grow by more than 80% over the next 20 years with congestion and delays only expected to get worse.
- Investment of ~$185 billion over the next 20 years will be needed to maintain rail’s share of projected total freight movements.

**Pipeline**
- Rapid growth in North American crude oil production, has maxed out existing pipeline capacity.
- Despite several expansion projects that are to be completed by 2020, at a cost of ~$[ ]bn, to serve Western Canada and Bakken production, takeaway capacity shortfalls expected to get worse.
- New pipeline construction imposes high capital costs, long lead times and requires permits and long-term contracts to support infrastructure.
- In addition to capacity constraints, pipelines are inflexible and do not always link to refineries needing the oil.

**Western Canada and Bakken Crude Production Compared to Current and Planned Takeaway Capacity**

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<thead>
<tr>
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<th>2013A</th>
<th>2020E</th>
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<tbody>
<tr>
<td>Crude Production</td>
<td>4,579</td>
<td>8,646</td>
</tr>
<tr>
<td>Pipeline Takeaway Capacity</td>
<td>4,496</td>
<td>8,216</td>
</tr>
<tr>
<td><strong>Implied Takeaway Surplus / (Shortfall)</strong></td>
<td>(83)</td>
<td>(430)</td>
</tr>
</tbody>
</table>

Source: Wall Street research.
Industry consolidation has decreased the number of competitors with the top ten commercial operators accounting for 70% and 58% of the liquid and dry market, respectively.

Industry consolidation is expected to continue due to:

- The inland barge industry has experienced significant consolidation with more than 50 material transactions taking place over the last 20 years.
- Consolidation is creating a mature and more rational industry where scale provides a competitive advantage.
  - Larger operators serve as key transportation resources to blue-chip customers across numerous industries.
  - Increasingly difficult for smaller operators to compete due to lack of vertical integration (no fleeting, no/limited towboats), aging fleets, inability to serve large customers, difficulty in meeting stringent operating requirements and customer preferences to deal with more integrated solution providers.

### Top Ten Largest Liquid Cargo Operators (1)

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<thead>
<tr>
<th>Name</th>
<th># of Barges</th>
<th>%</th>
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</table>
| Higman Marine         | 861         | 25.3%
| LeBeouf Brothers      | 349         | 10.3%
| Captives              | 277         | 8.1%
| Cooper Marine, Inc    | 208         | 6.1%
| Captives              | 200         | 5.9%
| Magnolia Marine Transport | 150   | 4.4%
| Captives              | 146         | 4.3%
| Cooper Marine, Inc    | 80          | 2.4%
| Captives              | 67          | 2.0%
| Captives              | 56          | 1.6%
| Captives              | 579         | 17.0%
| All Other             | 428         | 12.6%
| Total / Average       | 3,401       | 100.0% |

### Top Ten Largest Dry Cargo Operators (1)

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<tr>
<th>Name</th>
<th># of Barges</th>
<th>%</th>
</tr>
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</table>
| Higman Marine         | 4,358       | 24.9%
| LeBeouf Brothers      | 1,582       | 9.0%
| Captives              | 1,118       | 6.4%
| Cooper Marine, Inc    | 1,112       | 6.3%
| Captives              | 445         | 2.5%
| Captives              | 295         | 1.7%
| Captives              | 273         | 1.6%
| Cooper Marine, Inc    | 219         | 1.3%
| Captives              | 219         | 1.3%
| Captives              | 6,586       | 37.6%
| All Other             | 867         | 4.9%
| Total / Average       | 17,517      | 100.0% |


(1) Market share by number of operated barges.

(2) Represents subsidiaries of larger entities whose fleets predominantly move their own cargo.
Capacity discipline helps mitigate the effects of business cyclicality and will drive enhanced profitability for large operators with young fleets.

**Key Supply Trends**

- 17,517 dry cargo barges and 3,221 liquid cargo barges are currently in operation on the Inland Waterways.
- Barge construction and retirements netted a cumulative retirement of 477 barges over the past 10 years.
- Majority of barge construction that has occurred in recent years has been for replacement rather than growth.
- A significant portion of the U.S. barge fleet is greater than 30 years of age and will need to be retired in the near term:
  - Estimated ~$2 billion replacement cost.
  - 22% of the liquid barge fleet will have to be replaced over the next few years.
  - Number of competitors decreasing due to additional regulatory and compliance policies and high cost of reinvestment.
- Limited barge supply chain with a concentrated manufacturing base.

**Liquid Barges in Operation by Year of Build**

**Dry Barges in Operation by Year of Build**

**Total U.S. Barge Fleet Has Remained Relatively Stable Over Time**

End of life cycle assumes barges greater than 30 years old.

Strong growth in North American crude and petrochemical production is creating significant incremental demand for tank barge transportation.

**Key Dynamics Benefitting Tank Barges**

- North America is experiencing a renaissance in petrochemical and crude oil production, primarily driven by low-cost U.S. natural gas as well as crude oil production growth in Western Canada and shale regions in the U.S.
- The vast majority of U.S. refineries are located in the Gulf Coast region and along the U.S. Inland Waterways.
- Most coastal refineries have traditionally been supplied by imported crude, and some lack pipeline connections and may not be equipped or have the capacity to receive crude by rail; therefore, large amounts of oil are being moved out of production areas by pipeline, rail, or truck, but are being transferred to barges for the last leg of the trip to refineries.
  - Bakken and Canadian crude can be transported by pipeline to the Illinois or Mississippi River and then loaded onto barges to be delivered to refineries along the Gulf Coast.
  - Eagle Ford and Permian crude production is typically barged directly to refineries located in Texas and Louisiana.
- Barge transportation provides a cost-effective alternative for refineries and eliminates the need to develop new infrastructure such as rail unloading terminals or pipeline connections.
- Similar to refineries, the use of marine transportation by the petrochemical industry is a major reason for the location of petrochemical facilities along the Gulf Coast.
  - Texas and Louisiana currently account for approximately 80% of the U.S. production of petrochemicals.
  - The Gulf Coast region is expected to account for 78% of the $110 billion planned petrochemical investments through 2020.
  - Increased petrochemical production leads to greater northbound movements of petrochemical plant outputs to customers.

Source: EIA, Canadian Associate of Petroleum Producers, publicly available press releases and Informa.
Barging is a Critical Source of Transportation to the American Industrial and Agricultural Heartland

Strong U.S. grain exports and recovery in non-residential construction is driving increased dry barge transportation volumes and rates

Key Dynamics Benefitting Dry Barges

- Global population growth and higher protein diets are driving steady demand for U.S. grain exports
  - U.S. exports further supported by improved domestic production yields led by seed genetics
  - U.S. grain exports expected to grow by ~30% between 2014 and 2019
- The vast majority of all grain products moving by barge are ultimately destined for overseas markets via export facilities located on the lower Mississippi River
- With close proximity to major crop areas and access to export facilities on the Gulf Coast, barge transportation via the Mississippi River accounts for ~60% of all U.S. grain exports
  - Barge shipments of grain, primarily for U.S. exports, are expected to increase by ~30% from 2013 through 2019
- An improving U.S. economy and recovering non-residential construction market are increasing demand for steel and other aggregate products
  - Non-residential spending is expected to increase at an 8% CAGR between 2013 and 2018
- The U.S. Inland Waterways run through the major industrial capitals of America, like Pittsburgh and Chicago
  - The inland barge market handles a disproportionate share of steel imports through the Lower Mississippi
  - Steel and aluminum plants are primarily located on the Inland Waterways and take advantage of the cheap cost of transporting materials via barge
  - Cement, an important non-residential construction material, is transported throughout the Inland Waterways via barge
    - Cement consumption is expected to grow by ~50% by 2018