INLAND PORTS LOGISTICS

2016 NORTH AMERICA ANNUAL REPORT

CBRE RESEARCH

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EXECUTIVE SUMMARY

The growth of international trade has placed pressure on major North American seaports, with cargo volumes rising faster than existing infrastructure can handle. The result is congestion on the docks, slower turnaround times for containers and increased supply chain costs.

Intermodal rail has become a key pressure-relief valve, allowing shippers to quickly and cheaply move away from ports to regional locations for further distribution.

Twelve key markets have become the major U.S. inland ports—all characterized by their connection to major seaports, first-rate transportation infrastructure and access to large markets.

The industrial real estate markets in each of these inland ports have outperformed, with availability rates falling faster than the national average and new Class A product being developed at twice the national average.

Source: CBRE Research, 2016.

INTRODUCTION

As the backbone of international trade, the supply chain relies on the efficient movement of goods from the point of production to the point of consumption. As global trade has increased (up 600% since 1980[1]), the impact on the front of the supply chain—the seaports—has grown as a greater percentage of raw materials and finished products are shipped across the seas. Additionally, the rise of e-commerce has placed pressure on the tail end of the supply chain—the regional distribution hubs and the last-mile service centers—as consumers have demanded faster and cheaper service. While the head and the tail of the supply chain are critical, the middle portion—the rail and trucking routes that connect the dots—is just as important and ultimately enables the transport of cargo to its final destination. Connecting this all are the inland ports—major transportation hubs that are designed to quickly and efficiently receive freight from the seaports and move it to distribution hubs in the center of the country.

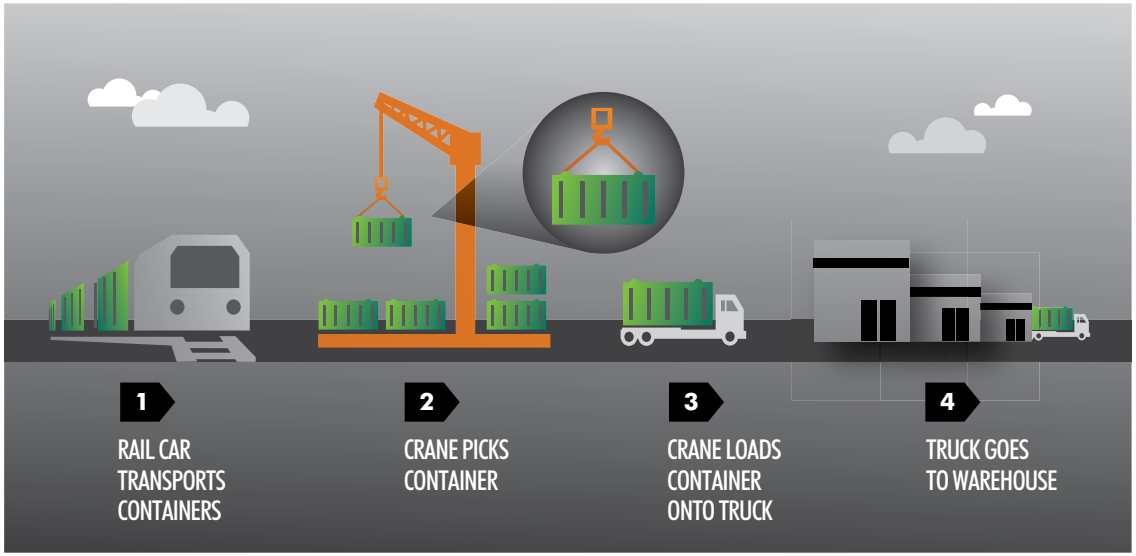
INEFFICIENCIES LEADING TO INCREASED SUPPLY CHAIN COSTS

Since the end of the Great Recession, U.S. imports and exports have picked up tremendously, growing 36% and 38%, respectively. While investment in seaport infrastructure has grown over the same time, the expansion of capacity has not kept up with the growth in cargo volume. As a result, congestion on the docks has become a problem and has grown with the advent of post-Panamax and super post-Panamax container ships that can deliver up to 20,000 TEUs on each call. At the Ports of Los Angeles and Long Beach (LA/LB), together the busiest seaports in North America, the time to "turn" a container (offload cargo from a ship and then the dock) has increased as volumes have grown. The METRIS Index[2] measures the average turn times at LA/LB and have revealed that, while times are improving, they still are affected by capacity stress and are lower than the metric (a score of 50 or better) required for ideal efficiency.

This bottleneck has created additional costs in increased drayage and container chassis fees to the truckers who move the containers, and in loss of time as containers sit idle at port. The urgency to move cargo away from the ports and into distribution has led to increased investment in intermodal rail infrastructure that can quickly and cheaply move containers to the inland port locations where they can be efficiently handled.

[1] IMF, 2014.
[2] The index is measured on a scale from 0-100 with a score over 50 considered acceptable.

Figure 1: How an Inland Port Works



Source: CBRE Research, 2016.

Intermodal freight transport involves an intermodal container or vehicle, using multiple modes of transportation (rail, ship and truck), without any handling of the freight itself when changing modes.

WHAT MAKES AN INLAND PORT?

As the name suggests, an inland port is a non-seaside hub where significant amounts of cargo are handled, warehoused and broken into smaller batches for further distribution. The inland port is often anchored by an intermodal rail facility but can also have an inland waterway, such as a river, along which cargo can be shipped.

While there are hundreds of intermodal facilities across the U.S., it's important to note that not all of them are true inland ports. All inland ports meet two criteria:

- Direct connection to a major seaport via Class I rail;
- Major transportation infrastructure usually in the form of rail, but also interstate highway or inland waterway.

Beyond these two mandatory criteria, inland ports also share many, if not all, of the following characteristics:

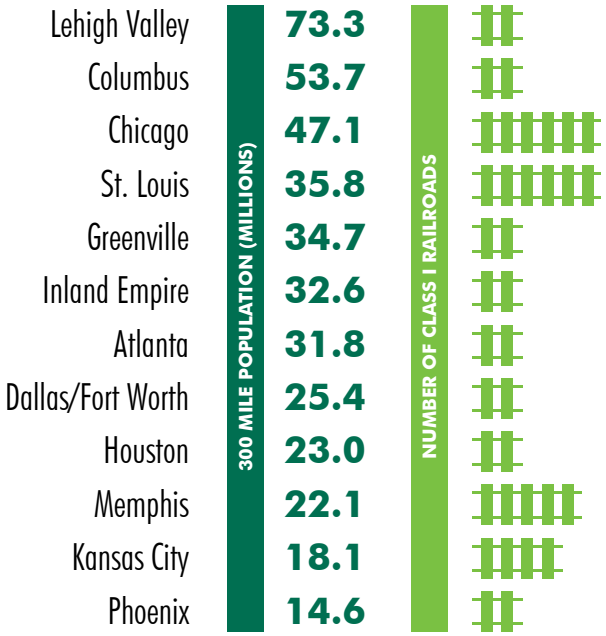
- Access to large markets—at least 10 million people within a 300-mile radius;
- Plentiful industrial real estate inventories with an abundance of Class A warehouse and distribution space;
- Large and consistent labor pools;
- Local or state economic development policies that provide Free Trade Zones and tax incentives.

When all of these criteria are met, the number of major inland ports in the U.S. shrinks to 12 that stand out. Each of these are notable for their infrastructure, connection to major seaports and market reach.

"Approximately $75 billion of goods are imported and exported annually through the CIC intermodal, and the park has become the fastest-growing agriculture export hub in the Midwest. CIC-Joliet/Elwood continues to be a driver for industrial activity in the Chicagoland area and will continue to drive growth and absorption in the region for years to come."

– Michael Murphy, Chief Development Officer, CenterPoint

Figure 2: Major U.S. Inland Ports



Sources: U.S. Department of Transportation, 2016, and CBRE Research, 2016.

CASE STUDIES

The best way to understand how an inland port works in the supply chain is to look at examples that are thriving in the current environment. Three of them—Chicago, Greenville and St. Louis—each occupy a crucial spot in both the national and regional supply chains and are instrumental in the orderly movement of freight across the continent.

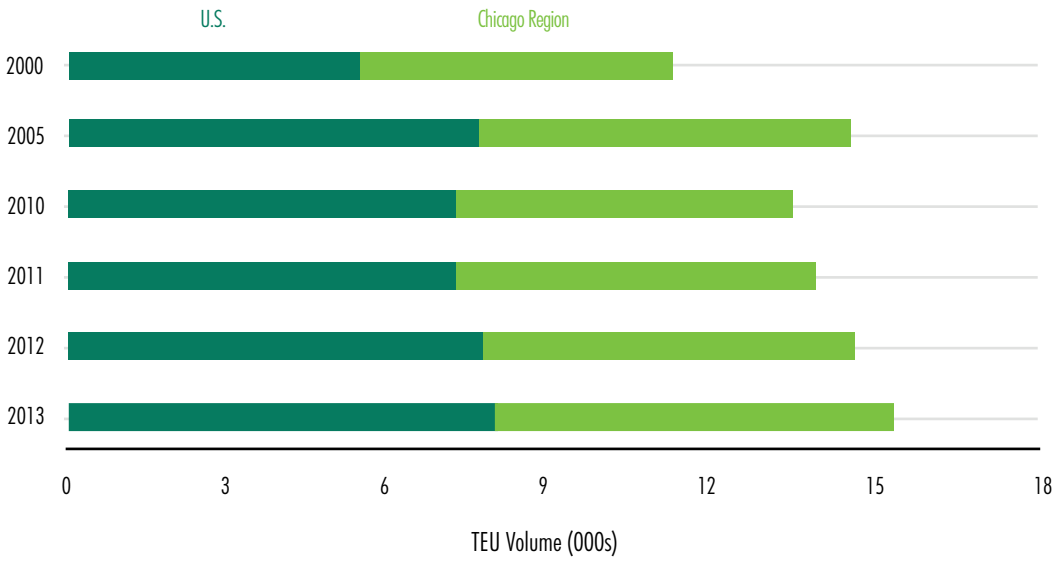
THE BIG ONE – CHICAGO

Chicago is the largest point of origin and termination for rail-to-truck intermodal shipments in the U.S. (known as an intermodal lift), with close to half of all shipments beginning or ending their journey in the region. Together, the region's 18 intermodal terminals moved 15.4 million TEUs in 2014 (the latest data available), collectively ranking as the second busiest port behind Los Angeles and Long Beach. The majority of this massive volume of freight flows through the CenterPoint Intermodal Center (CIC), North America's largest intermodal terminal, spanning 6,500 acres in parts of Joliet and Elwood, Illinois—approximately 40 miles southwest of Chicago. The center currently provides more than 15 million sq. ft. of space to major distributors, manufacturers, retailers and third-party logistics operators and has absorbed an average of 1 million sq. ft. of space annually since opening in 2002. CIC is anchored by two Class I rail hubs: Union Pacific's 785-acre Joliet Intermodal Terminal and the 770-acre BNSF Logistics Park Chicago. Together, these two rail terminals handle more than 3 million TEUs annually and offer direct rail service to 80% of the major U.S. seaports in under three days and all 10 major seaports in five days.

Chicago's prominence within the national freight network is supported by its extensive freight infrastructure, which includes seven interstate highways, six of North America's seven Class I railroads, O'Hare International Airport and multiple water terminals serving the Great Lakes and Illinois Waterway. The region is a key node along the transcontinental rail corridor linking the West and East coasts and connecting importers and exporters with direct routes to major international trading partners, such as China, Mexico and Germany, and key U.S. consumer markets.

Between 2000 and 2013, intermodal container shipments grew 26% in the Chicago region. By 2040, inbound truck and rail shipments are projected to grow by 58% and 55%, respectively, while outbound truck and rail shipments are estimated to increase 38% and 147%, respectively[3]. The noteworthy increase in rail freight shipment reflects the increasing importance of reliable travel times and fuel efficiency to international and domestic shippers. 2015 was a record year for the industrial property market and CIC fared particularly well, completing several lease transactions of more than 3 million sq. ft. totaling nearly $300 million in investment. As freight volumes continue to grow in the Chicago region, the industrial property market is poised to enjoy record growth.

Figure 3: U.S. and Chicago Intermodal Lifts



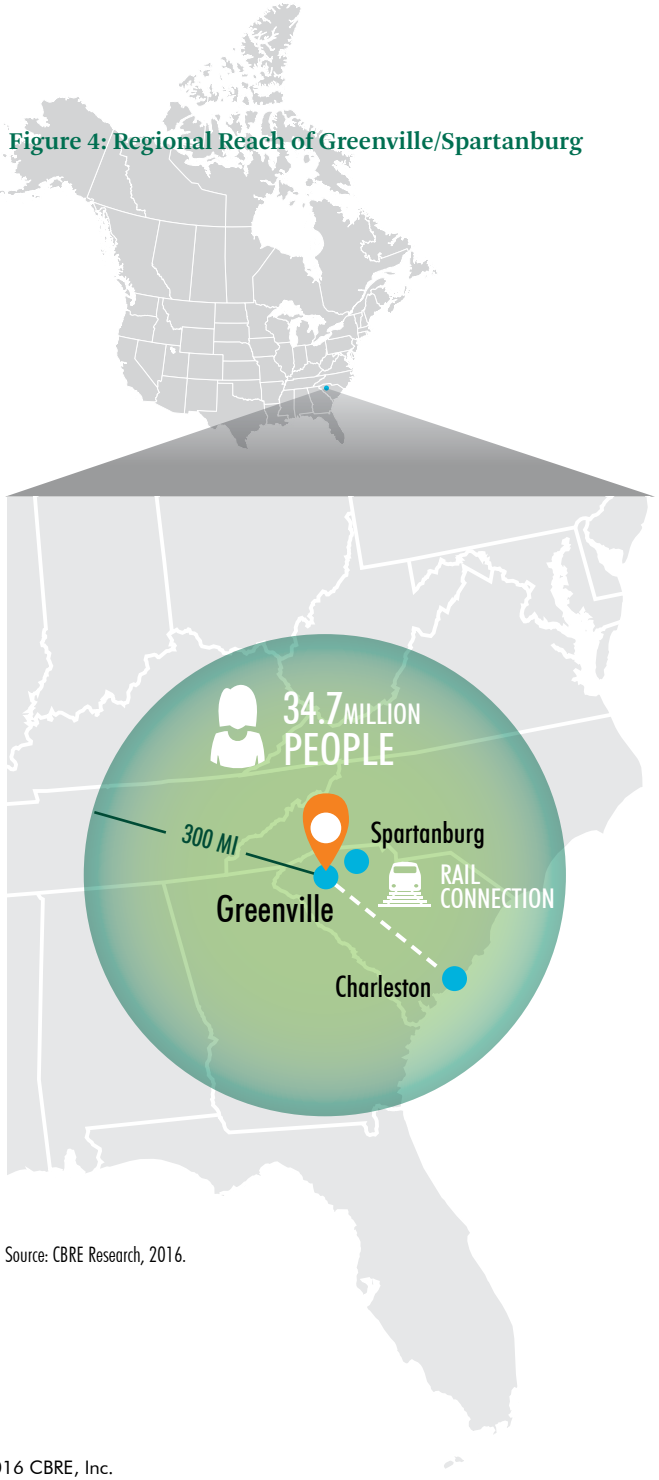
Source: CBRE Research, 2016.

THE UP-AND-COMER - GREENVILLE, SC

Fueled by the steady growth in container volume at the Port of Charleston, officials opened the South Carolina Inland Port in Greer in October 2013 to enhance the state's logistics network and spur economic development. Since opening, the $50 million investment has been a resounding success, boosting intermodal volume in the region by 166% and increasing year-over-year rail volume by 211%. The port continues to exceed expectations, completing 58,000 lifts in its first fiscal year and 75,000 in its second year of operation. The port is on track to surpass its goal of completing 100,000 rail lifts annually within five years of its opening. The port hit a monthly record volume of nearly 9,000 rail container lifts in March 2016.

[3] Chicago Metropolitan Agency for Planning analysis of 2012 Freight Analysis Framework

Figure 4: Regional Reach of Greenville/Spartanburg



Source: CBRE Research, 2016.

Conveniently located along Interstate 85 between Charlotte and Atlanta in Greer, South Carolina, the South Carolina Inland Port connects shipments from four transportation modes: ocean vessels serving the Port of Charleston, freight trains traveling along the Norfolk Southern rail network, airliners from the nearby GSP International Airport and trucks serving the East Coast. The port operates 24/7 and is located within a day's drive of nearly 35 million consumers in key eastern markets such as New York, Philadelphia and Atlanta. The port has benefitted considerably from the region's growing prominence as a global manufacturing and distribution hub. South Carolina ranks fifth nationally in export sales growth, which totaled $30.9 billion in 2015—a 4.2% year-over-year increase. Nearly one-third of the state's exports are fueled by the bourgeoning automotive industry, which boasts more than 250 manufacturing plants, suppliers and other related companies. In 2015 alone, South Carolina's auto plants shipped $9.8 billion worth of completed vehicles to countries such as China, Germany, Canada and the United Kingdom, making South Carolina the nation's top passenger auto exporter. The state also led the nation in the export of tires, comprising more than 28% of the national tire export market.

The South Carolina Inland Port's prominence within the global supply chain is set to rise as the Panama Canal expansion and infrastructure projects at the nearby Port of Charleston open the gateway for megaships to easily access East Coast trade routes. In 2015, approximately 23% of the 1.97 million TEUs imported or exported through the Port of Charleston moved by rail, and this is forecast to increase after completion of the North Charleston Terminal in 2020. The inland port's growth has also helped fuel historic expansion within the Greenville-Spartanburg industrial property market, where availability rates remain relatively low and asking rents and construction deliveries are on the rise. In Q1 2016, net absorption topped 1.6 million sq. ft. for the second consecutive quarter, and availability decreased to 10.6%.

The port's success has prompted state officials to explore the viability of another inland port 200 miles away in Dillon, South Carolina. This second port would be served by CSX Railroad and Interstate 95, providing access to additional southeastern markets and boosting volumes at the Port of Charleston by diverting cargo from nearby seaports. A decision on whether to move forward with the second port should be made by the end of 2016.

"The strong partnership between the Port of Charleston and the SC Inland Port in Greer has facilitated a steady flow of imports and exports and helped the region become a global manufacturing and distribution hub."

– Adam Mullen, CBRE Managing Director, Industrial & Logistics, Supply Chain and Occupier Leader, Americas

THE INLAND WATERWAYS – ST. LOUIS

Positioned within the most centrally located major metropolitan area for distribution and logistics operations, the Port of Metropolitan St. Louis is an extensive multimodal network of ports spanning over 70 miles along both sides of the Mississippi River. The district is comprised of more than 130 piers, wharves, docks, fleeting and other facilities; 16 public terminals, and 11 river crossings. The port system is governed by six different port authorities that oversee different sections of the river: The Illinois side is operated by America's Central Port, the Southwest Regional Port District and the Kaskaskia Regional Port District; the Missouri side is managed by the City of St. Louis Port Authority, the St. Louis County Port Authority and the Jefferson County Port Authority. The St. Louis Port District ranks as the third-largest inland water port by tonnage in the U.S.

Nearly one-third of the U.S. population lives within a 500-mile radius of the port …

One of the busiest ports in the St. Louis network, America's Central Port, just north of the St. Louis central business district, provides immediate access to every mode of transportation. The port's North Harbor is the most northerly ice-free port on the Mississippi River, allowing for year-round operation and direct access to the Gulf of Mexico. Nearly one-third of the U.S. population lives within a 500-mile radius of the port, allowing truck drivers to access 70% of the nation within two days via interstates 70, 64, 44 and 55. Additionally, the St. Louis region is served by six of the nation's seven Class I rail lines with three intermodal yards—BNSF, Norfolk Southern and CSX—that connect the market and the inland waterway to major seaports.

The America's Central Port complex is a 1,200-acre, mixed-use business and industrial park owned and operated by the Tri-City Regional Port District. The port authority leases space to more than 70 tenants and manages 1.7 million sq. ft. of warehouse space. The port's amenities are enhanced by the neighboring City of St. Louis' Port District—a 19-mile stretch of riverfront with an additional 6,000 acres of industrial, manufacturing and distribution facilities. Each year, nearly 80 million tons of product worth more than $1.1 billion travel through the port's harbors. The main commodities moved through the port include dry bulk grains, petroleum exports and other raw materials.
The U.S. inland waterway system is particularly efficient in moving these types of goods, as river barges can tow more than 22,000 tons of goods as a single unit—the equivalent of a 225-car train or 70 truck trailers. According to a 2008 study by the Texas Transportation Institute (TTI) at Texas A&M University, barges can move one ton of cargo 576 miles using the same amount of fuel as a rail car does to carry a ton of cargo 413 miles and a semi-truck does to haul it 155 miles.

The St. Louis port network recently completed a number of infrastructure investments, including: the $50 million Madison Harbor facility at America's Central Port, which includes 9,600 feet of rail track along with a new terminal and a general cargo barge dock; the renovation of the 90,000-sq.-ft. Municipal River Terminal warehouse, and the $21 million repair and reconstruction of the North and South Docks operated by the city's port authority. These new investments will increase the port's ability to handle agricultural exports from Midwest farmers and shipments to and from the Great Lakes and the Gulf of Mexico.

Figure 5: River Barge Efficiency

Source: "A Modal Comparison of Domestic Freight Transportation Effects on the General Public," 2009. National Waterway Foundation and the Texas Transportation Institute.

REAL ESTATE IMPLICATIONS OF INLAND PORTS

The markets defined as the true inland ports are among the key regional distribution hubs in the U.S. Major retailers and logistics firms have taken advantage of the efficiencies and scale that are possible when consolidating a number of distribution locations into a small number of hubs, and they often choose an inland port location as one of those hubs. Given that the mission of these facilities tends to be regional in scope—a large stock of inventory meant to service stores or smaller distribution centers within a two- or three-day travel radius—Class A big-box warehouses best fit the bill. Large retailers, distributors and logistics firms flock to these locations and house themselves in large facilities close to the intermodals that form the backbone of these inland ports. The impact on these industrial property markets is readily apparent, with rapid declines in availability rates recorded during the current post-recession period and all but three (Greenville, Houston and Memphis) declining at a faster rate than the national average.

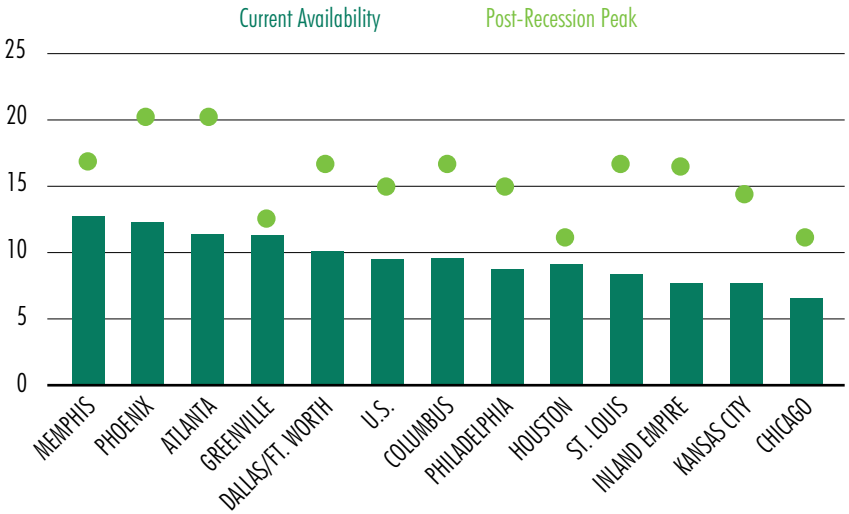
"The key industrial real estate implication to the growth of the inland port is the need for more big-box distribution centers in each of these locations. As supply chains optimize and users move to these hub locations, the need for quality Class A facilities will only grow."

– Scott Marshall, CBRE Executive Managing Director, Industrial & Logistics Services, Americas

Demand from users of the 12 major inland ports has led to a development boom in each, for an average annual growth rate of 2.7 % of total inventory—nearly double the national average. Inland port markets represent six of the top 10 fastest-growing markets in the nation (Greenville, Inland Empire, Dallas/Ft. Worth, Atlanta, Philadelphia and Kansas City).

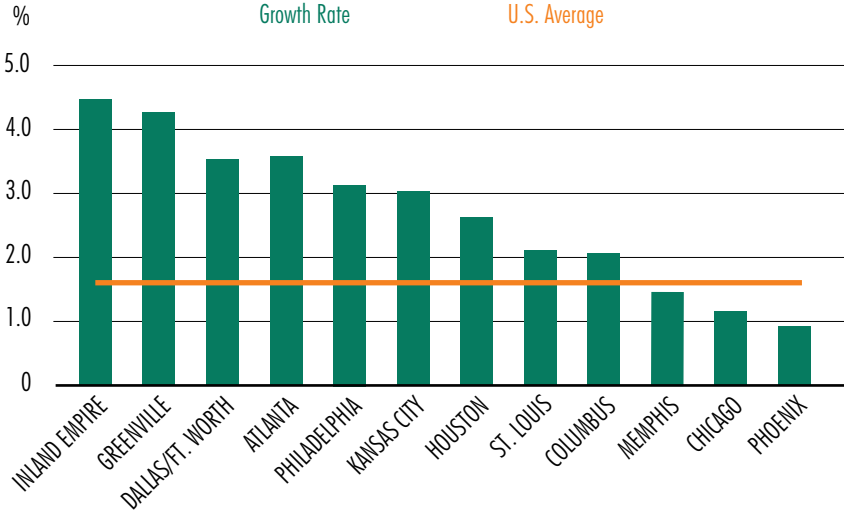
The bottom line is that inland port markets, due to their critical role in the supply chain, have recovered faster than their non-port counterparts since the Great Recession. And since most of this outsized performance is attributable to structural factors—infrastructure, access to markets, etc. —rather than cyclical factors, these markets are reasonably expected to fare well over the long term.

Figure 6: Current vs Post-Recession Peak Availability



Source: CBRE Research, 2016.

Figure 7: Inland Ports Growing Faster Than Average



Source: CBRE Research, 2016.

CONTACTS

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