

# THE SOUTHEASTERN US INDUSTRIAL & LOGISTICS STUDY

2014

PRESENTED BY: HFF



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## INTRODUCTION AND METHODOLOGY

This report has been assembled as an informational guide to demand drivers that affect the industrial markets in the Southeastern US. It is intended to be an annual report that relies on a variety of sources of data and identifies key trends in the markets analyzed. Full copies of the data or reports referenced here can be made available upon request.

#### METHODOLOGY:

- ☐ Focused on the 16 largest Metropolitan Statistical Areas (MSA's) as defined by the US Government in the Southeastern US. The South Florida MSA encompasses all three counties of Miami/Dade, Broward, and Palm Beach. We have broken these out for our analysis and also included the entire South Florida MSA as well.
- ☐ MSA data exported from CoStar unless otherwise noted.
- ☐ Industrial data is split into two main groups:
  - ☐ "Top 2000" 2000 largest industrial, flex, manufacturing buildings in each area/MSA.
  - ☐ "Good Stuff" Excludes flex product, includes buildings built after the year 2000 and over 75,000 SF
- □ Net Absorption is analyzed on a rolling previous 4 quarters. This flattens out the data and avoids large swings in one direction or the other.

FOR ADDITIONAL INFORMATION: MARTY BUSEKRUS



#### Why the Mediterranean fruit fly is at the center of the demand for freezer/cooler space

For decades, US agricultural officials have mandated that all fruit that is susceptible to the Mediterranean fruit fly enters the US through ports above the 37<sup>th</sup> parallel which is Philadelphia. This is so the Mediterranean fruit fly and its eggs will be killed off due to the cooler climate. Nearly all of the produce that enters the state of Florida enters the country through Philadelphia and is then trucked south in refrigerated trucks.

A new pilot program started by the **Florida Perishables Trade Coalition** and agreed upon by the US Government is changing the way fruit and other perishables enter the country. Fruit is placed in containerized, refrigerated cargo units and is electronically monitored to ensure that the temperature has not deviated by more than one degree over the course of roughly a week.

The program starts by importing grapes and blueberries from Peru & Uruguay. The first cargo ship with these perishables arrived on Tuesday October 1<sup>st</sup>, 2013. Once here, the containerized cargo must be surrounded by insect-proof nets and kept for up to 2 weeks at temperatures near freezing which is dubbed "cold treatment."

Assuming the process works, it will be extended to include other fruits and other import countries that are currently shipping their produce into Philadelphia. One obvious advantage is the time savings this will create. Currently it takes 21 days to reach Philadelphia and another 4 days to ship back to Florida after the produce has been inspected. In addition to the time savings, it is estimated that this will cut \$4,000 per container in terms of shipping costs, which is about 10% of the current delivery costs to South Florida.

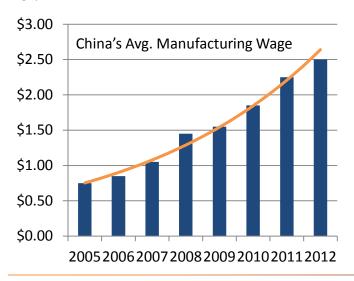
The second major advantage for industrial landlords is the increase in demand for refrigerated warehouse space in Southeastern ports. The pilot program will slowly be increased as more and more positive results are realized and eventually the goal of the Coalition will be to repeal federal regulation 7 CFR 319.56-2d (full version of the law available upon request) which prohibits Florida from directly importing these perishable products.

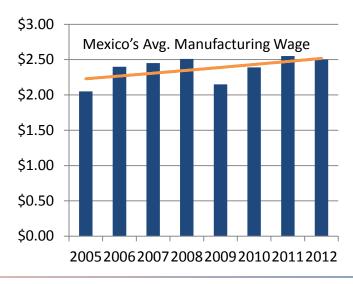
#### Mexico is the new China

Manufacturing salaries in Mexico have remained almost unchanged since 2005 at \$2.50/ hour growing just 2.8% in 7 years. Conversely, China has gone from \$.75/hour in 2005 to almost \$2.50/hour in 2012 representing a 19% increase. Manufacturers are taking note of this and making big bets on Mexico (see charts below)

To ship from Shanghai to Chicago costs roughly \$2.20 per cubic foot and takes 25 days. From Mexico to Chicago cost \$.40 per cubic feet and takes about 6-7 days via train.

Mexico also has free-trade agreements with 44 countries within all of the America's (NAFTA) as well as the EU, Japan, Singapore & Korea.





#### E-Commerce continuing to evolve & change logistics decisions

60 Minutes recently aired (pun intended) a segment about Amazon experimenting with delivery of packages via drones. Although not yet approved by the FAA, the implications for industrial space have already begun to change. It would seem logical that there would be a need for more warehouses but smaller in size. These warehouses could be remote and far outside of the path of development. When the high cost of diesel fuel to transport trucks from remote locations is compared with the cost of flying a drone is analyzed, shippers may be coming out way ahead.

On January 1<sup>st</sup>, 2014, the FAA released 6 areas where research and testing will be done in conjunction with Amazon. Only one of the six locations is in the Southeast. Virginia Polytechnic Institute & Virginia Tech will be conducting failure mode testing and identify and evaluate operational and technical risks areas. This proposal includes test site range locations in both Virginia and New Jersey.

#### **Changes in federal regulations**

On July 31<sup>st</sup>, 2013, all truck drivers had to comply with new HOS (Hours of Service) Regulations mandated by the US Department of Transportation. Put simply, drivers must drive less and sleep more. This will have a direct affect on the amount of time it takes for goods to ship long distances via truck.

Potential outcomes for this are already playing out. We think that more drivers will have extended sleeping berths in their cabs. This translates to longer cabs and therefore larger truck courts and turning radii when developers plan projects. Older product with shorter truck courts may fall out of favor faster with tenants.

Additionally, retailers may begin building more warehouses, but smaller than they had done in the past. The hub and spoke model of distribution may be changing. The average SF for new buildings in each market we analyzed has grown over time, but seems to be slowing somewhat year over year. Amazon is leading the charge and building several smaller, regional distribution centers.

This regulation combined with the increase in the cost of diesel fuel of over 250% in the last 10 years, translates into a significantly higher cost of shipping. Our belief is that with the infrastructure improvements in the national rail system combined with development of new intermodal systems throughout Florida, the use of rail to transport goods will increase throughout 2014 and certainly into 2015 with the expansion of the Panama Canal.



# CONCLUSIONS & PREDICTIONS FOR 2014

- □ 5 areas/MSA's have never had 4 trailing quarters of net negative absorption when focusing on "the good stuff." They are Miami/Dade county, South Florida as a whole, Jacksonville, Atlanta, & Memphis.
- ☐ Richmond posted the single largest net absorption as a percentage of its inventory in 2013 at 15% when looking at the Good Stuff. This combined with the 2<sup>nd</sup> lowest unemployment rate of all the markets we analyzed makes Richmond a place to focus on.
- ☐ When focused on MSA's/counties that are still off peak pricing in terms of asking rental rates, all of the Florida MSA's and counties we studied are at the high end of the spectrum. Asking rates are off between 13% in Orlando to 28% in Tampa from their pre-recession highs.
- ☐ Mathematically, for every roughly 100 bp rise in the costs of borrowing, the cap rate would need to increase by 25 bp to achieve the same levered IRR.
- ☐ The spread between cap rates and the 10 year treasury/the cost of borrowing is above average. We feel that even if the costs of borrowing continue to increase in 2014, it will have a minimal affect on cap rates.
- ☐ There is a cannibalism going on between the ports in Florida and a major initiative to consume products in Florida that entered through a Florida port according to state legislature. Look for other states to ramp up their marketing in order to attract Post-Panamax ships.



# CONCLUSIONS & PREDICTIONS FOR 2014

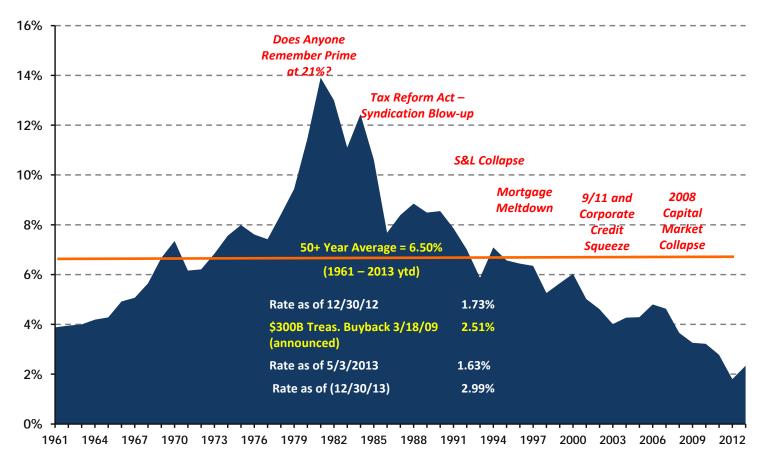
#### **PANAMA CANAL DISCUSSION POINTS**

The Panama Canal is scheduled to open in early 2015. Throughout 2014 more reports and studies should become available that describe the shift from West coast ports to East coast ports which has already been occurring for the past 20 years.
The shift will be more noticeable for products that are cost sensitive, not time sensitive.
Atlanta is the largest market in the Southeast and is served by the 3 <sup>rd</sup> largest port in the country (Savannah), HOWEVER, 60% of Atlanta's waterborne imports arrive from the West coast, NOT Savannah.
Although the Panama Canal is certainly important and a vital link, to put it in perspective, it only handles about 5% of the global trade.
The use of larger ships (13,000 TEU's vs. 5,000) will mean fewer and more concentrated ship calls at East coas ports. Fewer calls will lead to higher peak load demands, not necessarily higher annual volumes of TEU's.
In order for a port to capture more TEU's than its competing neighbor ports, it must have the ability to off-load containers easily and efficiently. On-dock rail will be a must and the length of time to get in and out of port will be a determining factor.
Look for inland ports to begin to take shape in Southern Florida to handle the potentially increased amount of TEU's at Port Everglades (due to their new on-dock rail system) and Port Miami (because of their on-dock rail and capacity for Post-Panamax ships.)
Don't count on the West coast ports and the rail companies to allow the shift to East coast ports to happen easily. Large infrastructure projects are underway on the national rail system that will attempt to offset cargo flowing to East coast ports.



# CAPITAL MARKETS SUMMARY

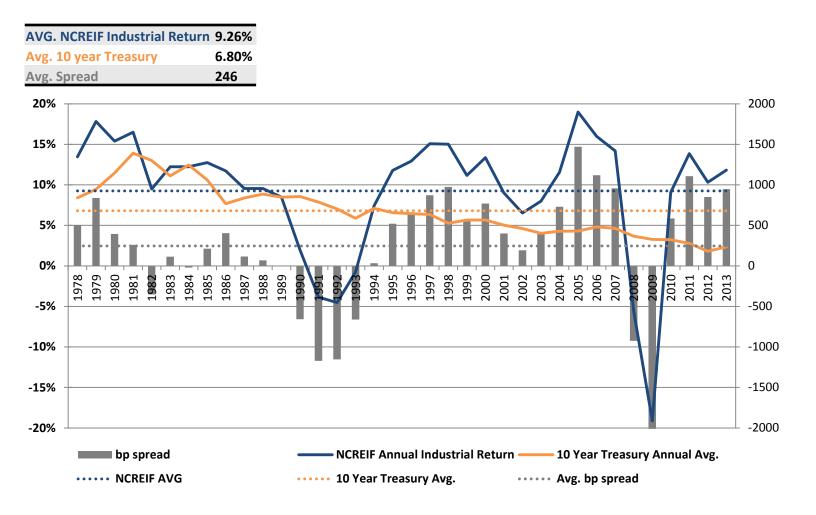
#### U.S. Treasury Yields are Well Below the 50-Year Average



Sources: Federal Reserve, U.S. Department of the Treasury

# CAPITAL MARKETS SUMMARY

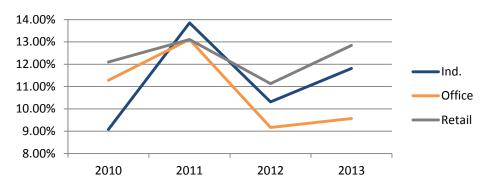
#### NCREIF ANNUAL INDUSTRIAL RETURNS VS. 10 YEAR TREASURY



Our conclusion is that spreads are historically wide and that 2014 will result in more spread compression rather than an increase in return requirements.

Additionally, we looked at the NCREIF Industrial returns vs. Office & Retail dating back 4 years.

Year	Ind.	Office	Retail
2010	9.08%	11.28%	12.10%
2011	13.85%	13.11%	13.11%
2012	10.31%	9.17%	11.13%
2013	11.81%	9.57%	12.84%



# CAPITAL MARKETS SUMMARY

#### TRANSACTION VOLUME DECREASES IN 2013

Our report analyzed sales comparable data from Real Capital Analytics based on the following criteria:

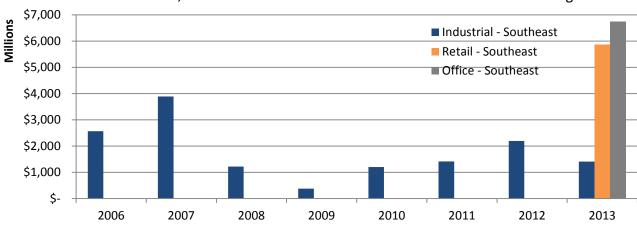
- Warehouse buildings only (no manufacturing, flex, telecom, etc.)
- Priced greater than \$7.5M
- Excluded condo conversions, pending deals, partial interest sales, and entity level transactions

The first bar chart below shows that volumes are off for 2013 in the Southeast. We are constantly hearing from investors that there have not been many deals for them to look at and the market is soft. This chart backs up what we've been hearing in the market.

Industrial is always a lower price per square foot than office and retail, but we wanted to look at volume as well as the number of deals. In the chart below, the dollar volumes for 2013 were based on the following number of

Industrial: 79 Retail: 311 Office: 222

transactions:





We also looked at where the majority of industrial trades occurred in 2013. Based on the same criteria as above, the following table was produced.

Region	<b>Total Volume</b>	% of Total
Southeast	\$1,410,721,465	16%
Northeast	\$1,205,842,774	14%
MidAtlantic	\$1,107,004,529	13%
West	\$2,764,124,565	31%
Midwest	\$1,356,394,780	15%
Southwest	\$935,272,487	11%
Total	\$8,779,360,599	

#### **SELECT 2013 TRANSACTIONS**

Sale Date	Name	Market	Size	Price	\$/SF	Cap Seller	Buyer
December	Dade Paper	South Florida	223,104	\$30,000,000	\$135	5.25% Dade Paper	Duke
February	Cobia Distribution Facility	South Florida	240,645	\$22,100,000	\$92	5.50% Prologis	TIAA-CREF
September	Siemens Crossdock	Memphis	619,000	\$24,600,000	\$40	5.76% Clarion	JP Morgan
June	Mitsubishi Electric DC	Atlanta	559,407	\$38,000,000	\$68	5.80% IDI	LaSalle
May	Lakeview Industrial Park	South Florida	210,350	\$17,500,000	\$83	5.90% Morgan Stanley	IIT
June	Medley International Business Park West	South Florida	868,651	\$59,900,000	\$71	6.0% TA Associates	Lincoln
September	Clarion Atlanta Portfolio	Atlanta	2,424,000	\$100,200,000	\$41	6.10% Clarion	Exeter
September	Highwoods Atlanta Portfolio	Atlanta	1,676,588	\$92,000,000	\$54	6.17% Highwoods	Crow Holdings
March	Sunrise Distribution Center	South Florida	Total: 401,650 SF (1) 200,000 SF (2) 143,000 SF (3) 58,650 SF	\$39,300,000	\$98	6.25% Cobalt	ІІТ
December	Pioneer & Sunstate Industrial Parks	Tampa	332,143	\$14,600,000	\$44	6.33% Walton Street	Westmount
May	America's Gateway Park	South Florida	306,924	\$23,700,000	\$77	6.40% TA Associates	Terreno
October	La Quinta DC	Orlando	181,394	\$7,300,000	\$40	6.50% Prologis	Cobalt
December	SouthPark & Centre Pointe Parks	Nashville	1,774,882	\$77,300,000	\$43	6.50% Crow Holdings	Prologis
June	Shutterfly Headquarters	Charlotte	303,188	\$15,500,000	\$49	6.60% Beacon Partners	One Liberty Properties
September	Gold Hill & Ridge Creek	Charlotte	408,174	\$19,900,000	\$49	6.60% Prologis	Exeter
September	Woodlands at Riverside - 100 & 200	Atlanta	255,360	\$11,275,000	\$44	6.60% IDI & JP Morgan	High Street
October	Sunshine State - Southeastern Headquarters Building	South Florida	234,000	\$11,800,000	\$50	6.60% Groupe Pacific	DCT
April	Georgia Pacific Portfolio	Atlanta	900,640	\$33,800,000	\$37	6.75% Georgia Pacific (Koch Industries)	Exeter
May	Sawgrass Distribution Center I	South Florida	131,800	\$12,500,000	\$95	6.75% Terry Stiles	Clarion Partners
October	Interstate South Industrial Park – Bldng 2A	Atlanta	437,760	\$12,400,000	\$28	6.90% Space Center	Sealy
September	Georgia Pacific - JAX	Jacksonville	546,000	\$26,450,000	\$48	7.10% Johnson Development	Exeter
January	Interstate South Industrial Park – Phase I – Building 3	Atlanta	578,620	\$15,200,000	\$26	7.20% DCT	Exeter
December	Medley East & Hialeah Gardens	South Florida	844,889	\$48,250,000	\$57	7.25% TA Associates	COFE Properties
June	Main Street Distribution Center	Jacksonville	240,000	\$8,800,000	\$36	7.80% Dalfen America	Becknell Development
August	Orlando Industrial Portfolio	Orlando	526,694	\$24,000,000	\$45	7.90% Cornerstone R.E. Funds	Chesapeake RE Group
November	Patriot Plaza	Charlotte	1,361,500	\$50,500,000	\$37	9.00% Patriot Equities & JP Morgan	New York Life
July	Greenwood Industrial Park	Atlanta	504,000	\$11,000,000	\$22	N/A UBS	KTR
July October	Prosepct Park Former Goya Foods	South Florida South Florida	274,000 142,000	\$13,450,000 \$10,600,000	\$49 \$76	N/A Invesco N/A Goya Foods	KTR Bristol

C O R E

## MSA DEMOGRAPHIC OVERVIEW

MSA	Population	Unemployment
United States	313,900,000	7.0%
South Florida (All 3 counties)	5,762,717	7.0%
Atlanta	5,457,831	7.7%
Tampa	2,842,878	6.4%
Miami Dade	2,591,035	7.0%
Charlotte	2,296,569	7.5%
Orlando	2,223,674	6.0%
Broward	1,815,137	7.0%
Nashville	1,726,693	6.6%
Jacksonville	1,377,850	6.0%
Palm Beach	1,356,545	7.0%
Memphis	1,341,690	9.5%
Richmond	1,231,980	5.8%
New Orleans	1,227,096	6.3%
Raleigh/Durham	1,188,564	6.0%
Birmingham	1,136,650	5.7%
Charleston	697,439	6.0%

Our report focused on the 16 largest MSA's in the Southeast and the ones that are most critical to industrial investors. The chart on the left gives a broad overview of the macroeconomic conditions of each.

The Bureau of Labor Statistics has 11 categories for employment in the private sector called Super Sectors. Every company no matter how small or large fits into one of these categories:

- Natural Resources and Mining
- Construction
- Manufacturing
- Trade, Transportation, and Utilities
- Information
- Financial Activities
- Professional and Business Services
- Education and Health Services
- Leisure and Hospitality
- Other Services
- Unclassified



Of the 11 super sectors, the ones that affect the industrial commercial real estate markets the most are Manufacturing and Trade/Transportation/Utilities which are the focus of our report.

We first looked at each of the 16 largest MSA's in the Southeast to see what % of the total employment is in the Manufacturing and the Trade/Transportation/Utilities Super Sectors. The two charts on the following page rank each MSA by the largest % of their employment base dedicated to each.

#### MSA DEMOGRAPHIC OVERVIEW

It should come as no surprise that each of the counties in South Florida had the lowest percentage of employees employed in the manufacturing Super Sector. In fact, the 7 areas in Florida we analyzed were all at the bottom of the chart.

What was a surprise though is that NONE of the MSA's in the Southeast have a % of employment in the manufacturing super sector that is above the national average of 10.76%. We dug a bit deeper and looked at the percentage of employment in 3 key manufacturing states of North Carolina, South Carolina and Tennessee. When looking at the states as a whole, their percentages were all higher than the US average indicating to us that the majority of manufacturing jobs are located well outside of the standard MSA's that we focus on.

We also went back in time and found that each of the states and the country as a whole has decreased the % of employees working in the manufacturing super sector, indicated in the following table. Despite talking points regarding on-shoring and manufacturing coming back, we looked also at total number of those employed in this super sector over time. We found that in 2002, the US employed 14.5M people in manufacturing compared with 11.9M in 2012. See the table below for additional detail. Manufacturing may be coming back but it appears the US is still loosing it at a faster pace than it is gaining.

% employment - Manufacturing										
	2012	2007	2002							
South Carolina	14.89	15.95	19.94							
Tennessee	13.99	16.27	19.31							
North Carolina	13.62	15.88	20.55							
US TOTAL %	10.76	12.13	14.14							
US Total Whole	11,904,945	13,833,022	14,459,712							

The Trade/Transportation/Utilities Super Sector (TTUSS) is another focus for industrial drivers. The table to the right sorts each of the MSA's by their % of the employed population. Here, most of the MSA's are above the US average and even the 4 that are below, are not off by much.

MSA	% of employment - Manufacturing
TOTAL US	10.76%
Charleston	10.41%
Nashville	10.30%
Charlotte	9.86%
Birmingham	9.43%
Memphis	8.97%
Atlanta	7.69%
New Orleans	6.85%
Richmond	6.59%
Raleigh/Durham	6.32%
Tampa	6.11%
Jacksonville	5.61%
Orlando	4.24%
Broward	4.18%
Miami Dade	4.17%
South Florida	4.00%
Palm Beach	3.41%

MSA	% of employment - Trade/Transportation/ Utilities
Memphis	31.62%
Miami Dade	29.98%
Broward	26.57%
Atlanta	26.46%
Birmingham	25.68%
Charleston	24.30%
Charlotte	23.97%
New Orleans	23.97%
Jacksonville	23.86%
Nashville	23.61%
South Florida	22.80%
TOTAL US	22.80%
Richmond	22.74%
Raleigh/Durham	21.93%
Tampa	21.82%
Palm Beach	21.56%
Orlando	21.49%

## MSA DEMOGRAPHIC OVERVIEW

#### **LOCATION QUOTIENTS**

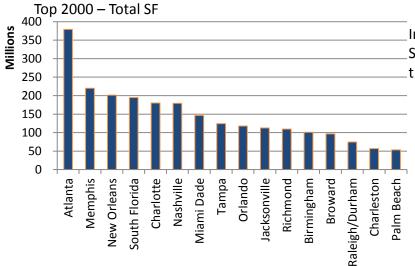
The employment percentages listed on the previous pages only tell half of the story though. Location quotients (LQ) are ratios that compare the concentration of a resource or activity, such as employment, to that of a larger area or base. For example, location quotients can be used to compare State employment by industry to that of the nation; or employment in a city, county, metropolitan statistical area (MSA), or other defined geographic sub-area to that in the State. If an LQ is equal to 1, then the industry has the same share of its area employment as it does in the reference area. An LQ greater than 1 indicates an industry with a greater share of the local area employment than is the case in the reference area. For example (assuming the U.S. as the reference area), Las Vegas will have an LQ greater than 1 in the Leisure and Hospitality industry because this industry makes up a larger share of the Las Vegas employment total than it does for the country as a whole.

If one were to compare location quotients for each MSA and use the US as the *reference area*, the table would look almost identical to the % employed in the preceding section with a few minor changes. A more useful analysis is to compare one MSA to another in an effort to determine which MSA's have higher concentrations of Trade/Transportation/Utility employment. The table below compares each of the MSA's to each other. For example, if we wanted to compare the MSA's of Orlando to that of Charleston, SC and Charlotte NC, we would look at the column on the left that references Orlando. This shows that Orlando has a location quotient of 1.18 relative to Charleston and 1.14 to Charlotte. This means both Charleston and Charlotte have a higher percentage of those employed in the Trade/Transportation/Utilities.

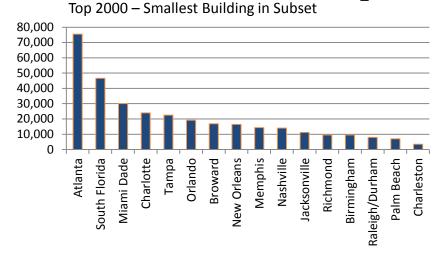
Trade/Transport/Utilities REFERENCE AREA Miami Dade	Miami/Dade	.28.0 Broward	0.74	68. South Florida	g Lo.71	0.74	98. Jacksonville	16.0 Te. Atlanta	08.0 Charleston	98.0 The Charlotte	o Raleigh/Durham	08.0 Richmond	T.11	08.0 Nashville	SS Birmingham	o So New Orleans
Broward	1 1 5	0.87	0.74		0.71	0.74	••••••				•••••••••••			•••••••		
Palm Beach	1.15	1 17	0.85	1.03	<del>.</del>		1.00	1.05			0.93	0.92	1.28	0.92	1.01	
	1.36		0.02	1.21	0.97	1.00	1.17		1.18	••••••	••••••••	1.08	1.51	••••••	1.19	
South Florida	1.12				0.80		0.96		0.97			0.89	1.24		0.98	
Tampa	1.40	1.21		1.25		1.03	1.21		1.21		1.12	1.12		1.12		
Orlando	1.36	1.17	1.00		0.97		1.17				1.09	1.08	1.51	1.09	1.19	1.14
Jacksonville	1.16	1.00	0.85	1.04	0.83	0.85		1.06	1.00	0.98	0.93	0.93	1.29	0.93	1.01	0.97
Atlanta	1.10	0.95	0.81	0.98	0.78	0.81	0.95		0.95	0.92	0.88	0.88	1.22	0.88	0.96	0.92
Charleston	1.15	1.00	0.85	1.03	0.82	0.85	1.00	1.05		0.97	0.93	0.92	1.28	0.92	1.01	0.97
Charlotte	1.16	1.03	0.86	1.06	0.82	0.88	1.03	1.08	1.03		0.95	0.95	1.32	0.95	1.04	1.00
Raleigh/Durham	1.20	1.07	0.91	1.10	0.92	0.89	1.07	1.12	1.07	1.05		1.00	1.38	1.00	1.09	1.04
Richmond	1.20	1.08	0.92	1.11	0.88	0.92	1.07	1.12	1.08	1.05	1.00		1.39	1.00	1.10	1.05
Memphis	0.89	0.72	0.49	0.76	0.44	0.49	0.71	0.78	0.72	0.76	0.72	0.72		0.72	0.79	0.75
Nashville	1.20	1.08	0.91	1.10	0.88	0.91	1.07	1.12	1.08	1.05	1.00	1.00	1.39		1.09	1.05
Birmingham	1.12	0.99	0.81	1.02	0.77	0.81	0.99	1.04	0.99	0.96	0.92	0.91	1.27	0.91		0.96
New Orleans	1.16	1.03	0.86	1.06	0.83	0.86		1.08			0.96			0.96	1.05	

## MSA INDUSTRIAL OVERVIEW - TOP 2000

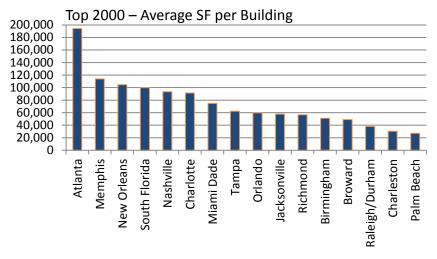
Switching to the industrial inventory within each of the 16 MSA's we started with an analysis of the top 2,000 industrial buildings in each MSA by SF. This analysis included flex properties, all classes of buildings, and any age.



In terms of total SF, Atlanta dominates the Southeast in this category with almost 375M SF in the top 2000 largest buildings.

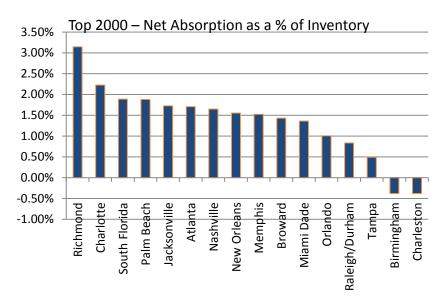


The chart on the left is a similar analysis where we looked at the smallest building to make it into the top 2000. 11 of the 16 MSA's have buildings smaller than 20,000 SF as their smallest building.



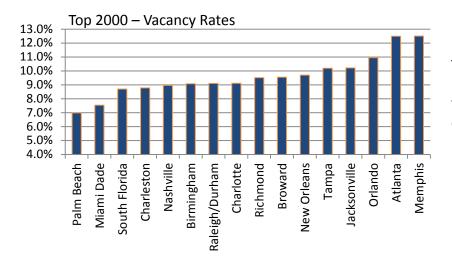
This final chart looks at the average SF of the top 2000 buildings. It is interesting to note that every MSA has grown their average building SF over the last 10 years with the exception of Charlotte and Raleigh/Durham. These two MSA's have actually shrunk their average size buildings

#### MSA INDUSTRIAL OVERVIEW - TOP 2000

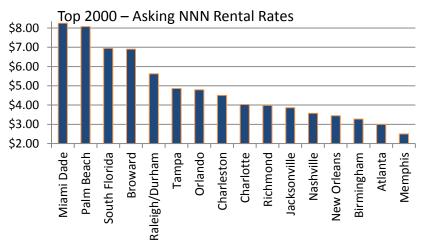


In order to compare net absorption across multiple MSA's, the only effective way to do it is look at the absorption figures as a percentage of the total inventory. We looked at the 2013 absorption figures for the top 2000 buildings and then divided by the total SF of the data set to come up with the graph on the left.

Richmond was the biggest winner in 2013 absorbing over 3% of its current inventory. Birmingham & Charleston were the only two MSA's that had negative absorption in 2013.



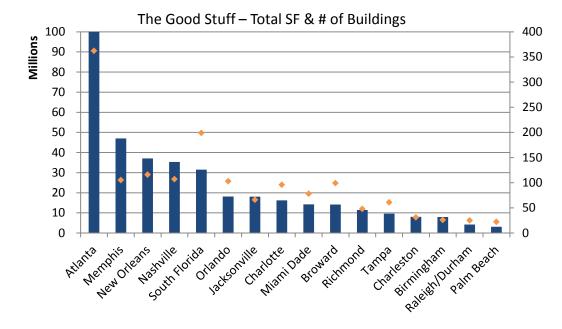
The vacancy rate for each MSA is shown on the left. A more detailed look at historical vacancy trends is given later in the individual MSA overviews.



Asking NNN rates shows that the highest asking rates are all in South Florida. Despite the massive amount of SF in Atlanta, it remains a laggard in terms of asking rates.

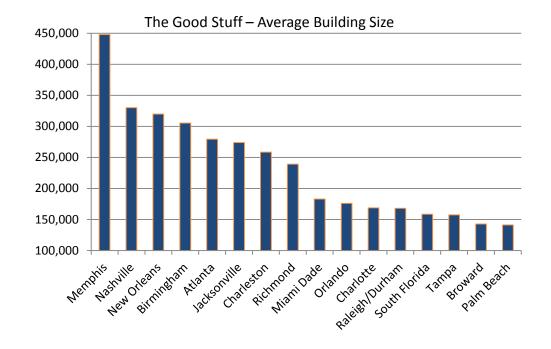
# MSA INDUSTRIAL OVERVIEW - THE GOOD STUFF

The Top 2000 analysis on the previous pages was helpful for getting macro trends in each MSA, but we also drilled down to what we call "the Good Stuff." This subset is for industrial buildings only (excludes flex), built after the year 2000, and over 75,000 SF. This is a segment of the market that the majority of HFF's clients focus on.



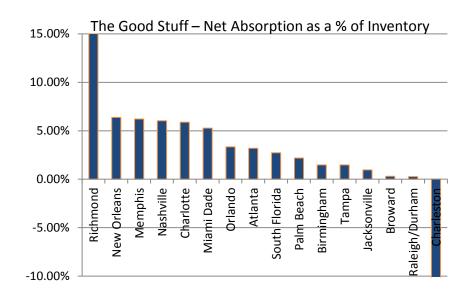
This first chart shows two different data parameters. First, the axis on the left is the total SF of this data set. Similar to the top 2000, Atlanta is far and above the largest MSA.

The axis on the right is the number of resulting buildings in each MSA. Atlanta has over 350 buildings, while Palm Beach County has only 22 buildings that meet the criteria listed above.



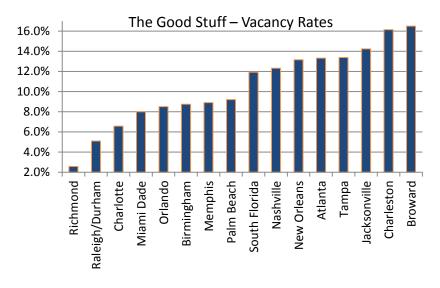
This chart depicts average building sizes for the Good Stuff. Here we see that Memphis actually has much larger average buildings and Atlanta falls to 5<sup>th</sup>. Given the tight land constraints in South Florida, it's no surprise that they have much smaller average size buildings.

# MSA INDUSTRIAL OVERVIEW - THE GOOD STUFF

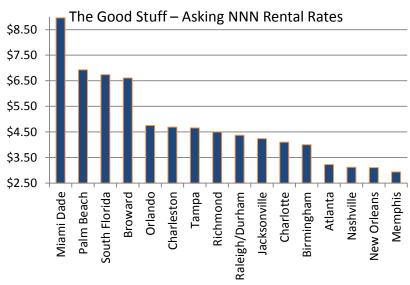


Similar to the top 2000 net absorption analysis, we looked at the overall net absorption as a percentage of inventory as a way to compare each MSA. Richmond once again was a huge winner absorbing 15% of the inventory we plotted.

There was only one MSA (Charleston) that had a negative net absorption and they lost over 10% of their current inventory. This was due to 881,000 SF that was lost in the  $3^{rd}$  &  $4^{th}$  quarters of 2013.



Vacancy rates are shown here on the right. Broward County is still struggling to recover from the recession while Charleston's vacancy rate has jumped from 5% at the beginning of 2013 to its current 16.1% due to the massive net negative absorption that it suffered in the second half of 2013.



Asking NNN rates are the final data set we look at on a comparative scale. Again, it's no surprise that South Florida leads the Southeast in terms of asking NNN rents.

# MSA INDUSTRIAL OVERVIEW - THE GOOD STUFF

	Asking rent %
MSA	decrease from
	peak
Memphis	1.7%
Richmond	2.4%
Charleston	6.6%
Atlanta	6.9%
Birmingham	8.9%
Charlotte	8.9%
Jacksonville	9.6%
Nashville	11.6%
New Orleans	11.9%
Orlando	13.2%
South Florida	14.1%
Broward	14.8%
Miami Dade	16.3%
Palm Beach	21.5%
Tampa	27.8%
Raleigh/Durham	38.1%

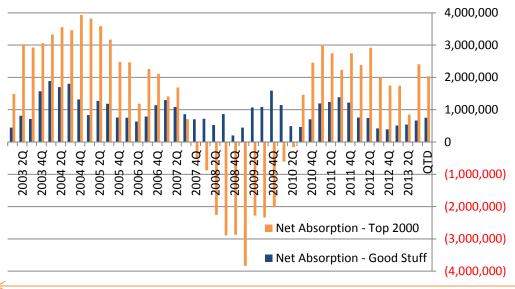
We further dissected the asking lease rates for the Good Stuff in each MSA to see which ones had fallen the most since their peaks in 2008 and which ones had recovered the most. The table to the left indicates the MSA's at the bottom have the most room for recovery while those at the top have either almost fully recovered or did not decrease substantially. None of the markets we looked at had asking rental rates that had exceeded peak asking prices.

A more detailed look at rental rates in each MSA can be found in the following pages.

All Florida MSA's!



#### MSA INDUSTRIAL OVERVIEW - DADE

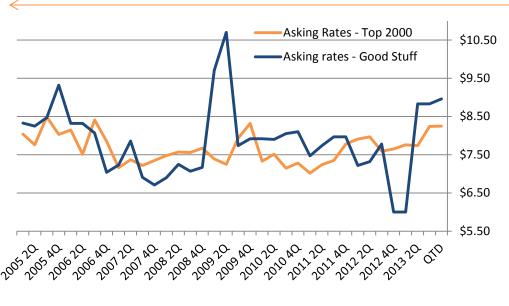


The Dade County market is one of five that we analyzed that has NEVER had a trailing 4 quarters of negative absorption when focusing in on the Good Stuff.

This enforces the safety and security of higher quality assets, particularly in Miami Dade County.



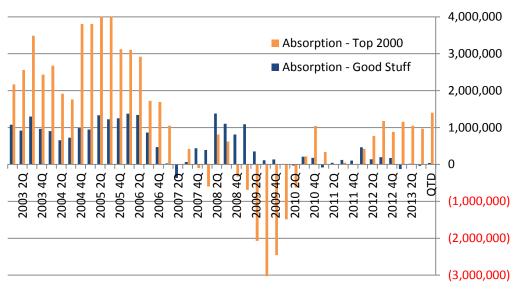
The vacancy rate has been much more steady in the larger subset of the Top 2000, shown in orange to the left. The blue line is the Good Stuff and has fluctuated much more, but rests solidly below 10%



Asking lease rates in Miami have remained very consistent over the last 10 years. This analysis does not show a large run-up in rental rate increases over the past years in either the Good Stuff or the Top 2000 properties.

The current rate vs. peak rates in 2008 for the good stuff is off 16.3% and is the 4<sup>th</sup> largest rate of all the MSA's in the Southeast indicating market rents have a substantial amount of room to grow.

## MSA INDUSTRIAL OVERVIEW - BROWARD

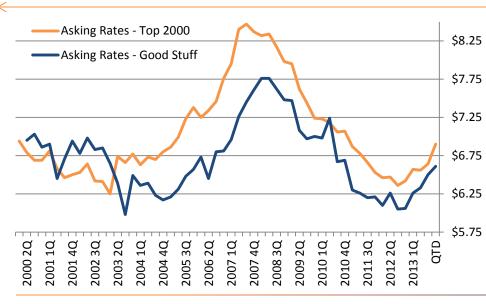


Broward has struggled with absorption since the downturn. Although generally positive, the velocity is slow and recovering from the losses in 2009 & 2010 has been difficult. This is especially true of the Good Stuff where the last 4 years have seen an average of just 125,000 SF of positive absorption.



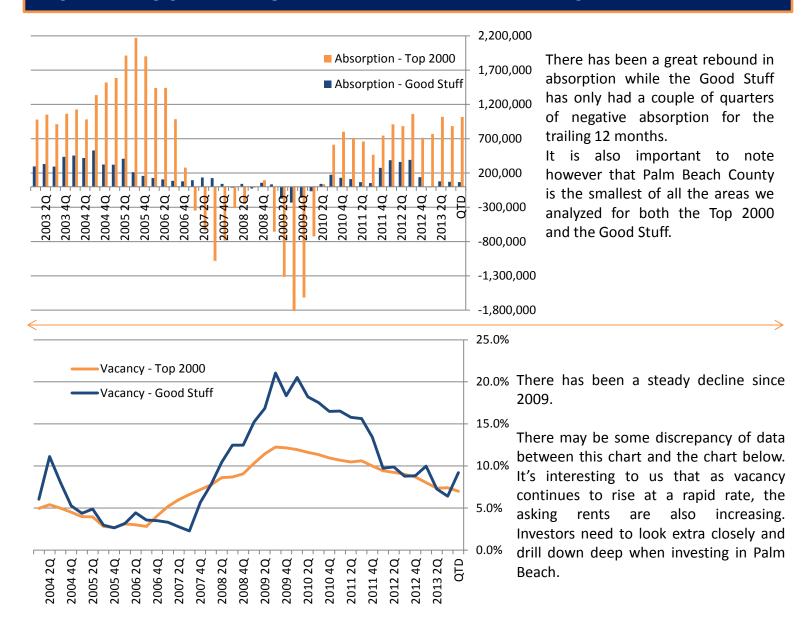
Vacancy decreased dramatically in the Good Stuff prior to the downturn, but has steadily crept up to above 15% and has the highest vacancy rate of any of the MSA's we analyzed.

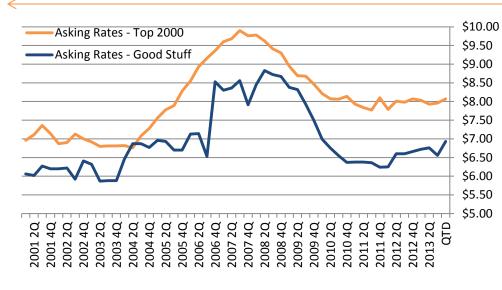
The vacancy rate for the Top 2000 has remained much more consistent and is just under 10%.



Asking rental rates for each data set has run in lockstep for the past 10 years. Asking lease rates are off 14% from their highs for the Good Stuff. Broward ranks 12<sup>th</sup> of all the MSA's for asking rents being below peak levels. With rental rates increasing, Broward should continue to increase rents at a healthy clip.

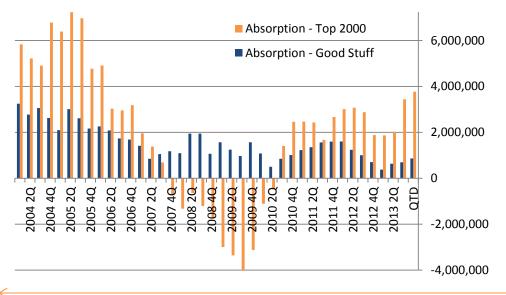
## MSA INDUSTRIAL OVERVIEW - PALM BEACH





Interestingly enough, the Good Stuff is actually \$1.00 PSF lower than the Top 2000. Also, asking rents appear to be back to levels not seen since 2003. Palm Beach has the second highest asking lease rates of all the areas we targeted ranking just below Miami/Dade county. Finally, Palm Beach is 21% below their peak which is the third largest spread we found.

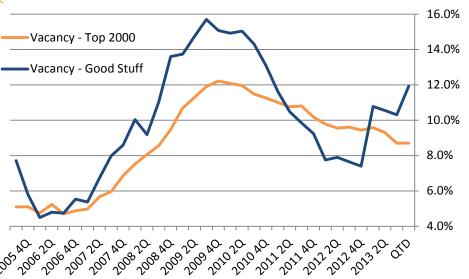
## MSA INDUSTRIAL OVERVIEW - SOUTH FLORIDA



South Florida is the second largest MSA we analyzed behind Atlanta. There is 200M SF in South Florida and 400M SF in Atlanta when we focus on the Top 2000 buildings.

South Florida is also one of 5 MSA's that has never had a negative trailing 4 quarters of net absorption when focusing on the Good Stuff.

Finally, it is the third largest in terms of net absorption as a percentage of overall inventory.



Despite strong absorption as noted above, recent deliveries and weak metrics in Broward County the vacncy rate for the Good Stuff has climbed over the past year.

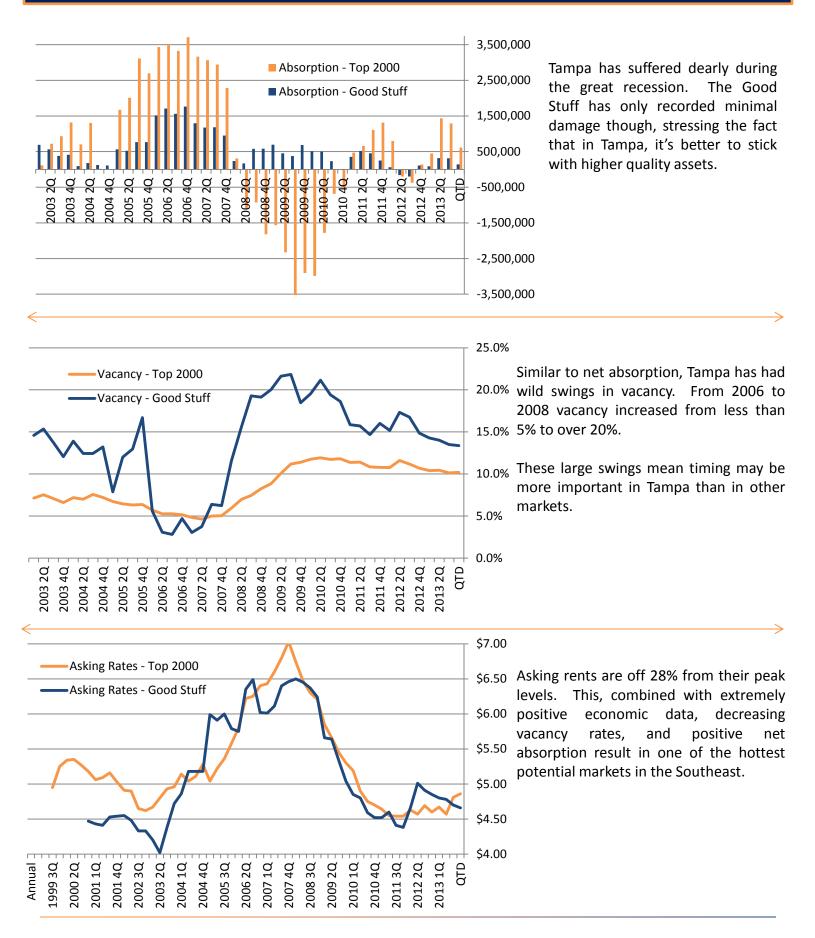
Fortunately, the Top 2000 is on a steady decline.



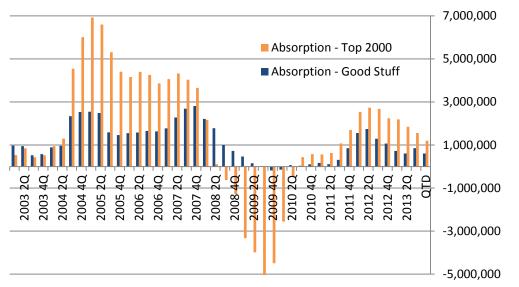
Asking rates for both subsets are moving in lock-step and are rising. They are still 14% below their peak which translates into lots of room for growth.

South Florida is the third largest rank for asking rates for both the Good Stuff and the Top 2000.

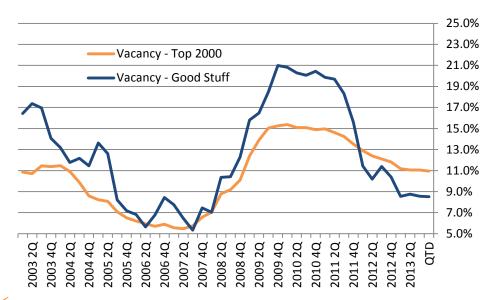
## MSA INDUSTRIAL OVERVIEW - TAMPA



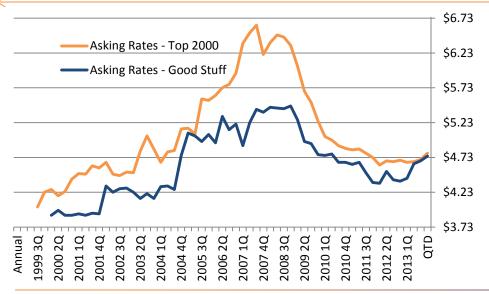
## MSA INDUSTRIAL OVERVIEW - ORLANDO



Orlando has good fundamentals with an unemployment rate at 6% which is a full 100 bp below the national average. The absorption rate has slowed from 2 years ago and stands at roughly 1% of current inventory for the Top 2000.



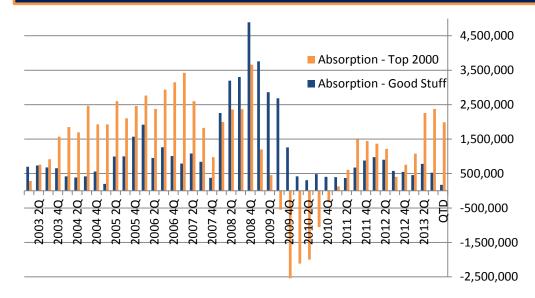
Orlando's Top 2000 is the third highest behind Atlanta and Memphis for vacancy. Despite this, several speculative developments for bulk, Class A distribution space are underway.



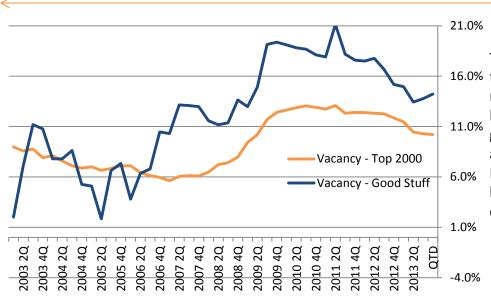
All MSA's in Florida are at the high end of the spectrum for peak to trough asking rates. Orlando is no exception and rates are off by 13%

With asking rates for both subsets at roughly \$4.75, they stand at 2004 levels.

## MSA INDUSTRIAL OVERVIEW - JACKSONVILLE



Jacksonville is towards the high end of the range for the Top 2000 as a percentage of inventory but 4<sup>th</sup> lowest for the Good Stuff. There have been huge swings, but Jacksonville is one of five MSA's that has never had a negative quarter for trailing net absorption when analyzing the Good Stuff.

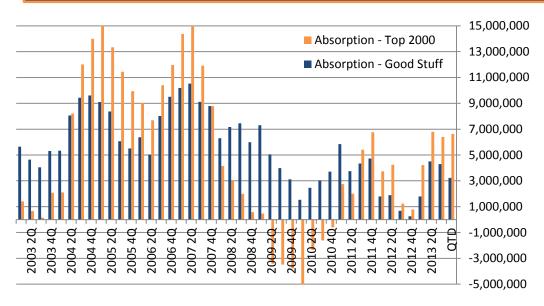


The vacancy rate is the 3<sup>rd</sup> and 4<sup>th</sup> highest
16.0% for the Good Stuff and the Top 2000
respectively. It has been headed down
but is a slow process. 3 main ownership
groups dominate the industrial market
and undeveloped land in Jacksonville:
6.0% Duke, Pattillo & Webb. Each have land
basis's that are very low, so new
construction should stay in check.



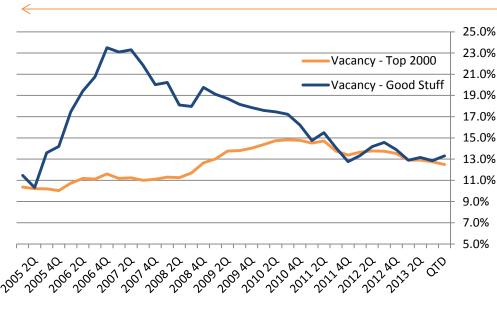
Rents are off 9.6% but have remained flat for 3 years. The Good Stuff is at 2004 levels

## MSA INDUSTRIAL OVERVIEW - ATLANTA



Atlanta is the largest MSA by far, however right in the middle of the pack for absorption as a percentage of current inventory.

Atlanta has also never had a negative trailing 4 quarters of net absorption when focused on the Good Stuff.



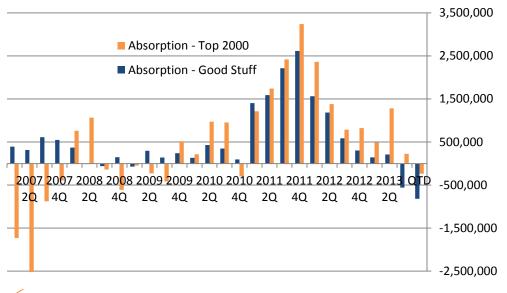
Vacancy has steadily declined since 2006 for the Good Stuff and had a small uptick for the Top 2000.



Rates are off their peaks by only 7% in Atlanta, but asking rates have been on a decline for the Top 2000 and are below 2003 levels.

\$3.15 In general, rental rates have remained \$3.05 very consistent over time. This is due \$2.95 mainly in part to the vast amounts of \$2.85 developable land that are available.

## MSA INDUSTRIAL OVERVIEW - CHARLESTON

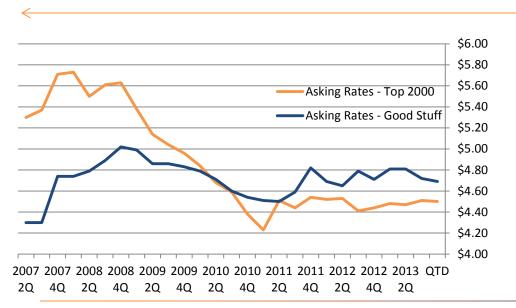


highest Charleston has the percentage of its population working in the manufacturing sector of all the MSA's, however, it's also one of the smallest areas we analyzed. Net absorption has been in check, even through the downturn, until recently. a devastating year for was Charleston, losing 881,000 SF in just the 2<sup>nd</sup> half of 2013. They were the only area that had negative absorption in 2013 for the Good Stuff.



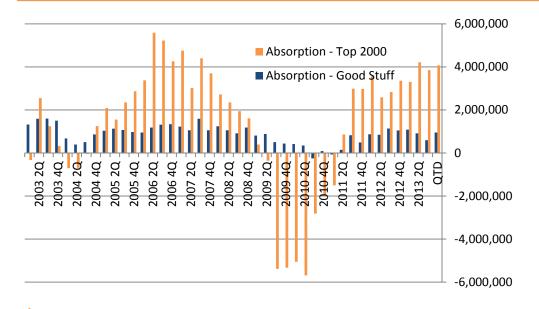
Similar to net absorption, the Good Stuff has really taken a beating this year. Vacancy had dipped below 5%, but then has shot up to over 15% for the Good Stuff. The source of the increase in vacancy lies in the outlying Berkeley County submarket where the majority of the negative absorption has occurred.

The Top 2000 has remained very consistent over time.



Asking rates for the Good Stuff has remained flat for 7 years, and is off its peak by only 6.6%. Rental rates for the rest of the market, however, have had to drop drastically in order to maintain the sub-ten percent vacancy as noted above.

#### MSA INDUSTRIAL OVERVIEW - CHARLOTTE



Net absorption for the Good Stuff has been positive in almost every year. There have been only two quarters where the trailing 12 months saw a negative net absorption and those were minimal.

In 2013, Charlotte absorbed just over 5% of its inventory for the Good Stuff and 2.25% of the Top 2000, which makes it the second biggest gainer behind Richmond.



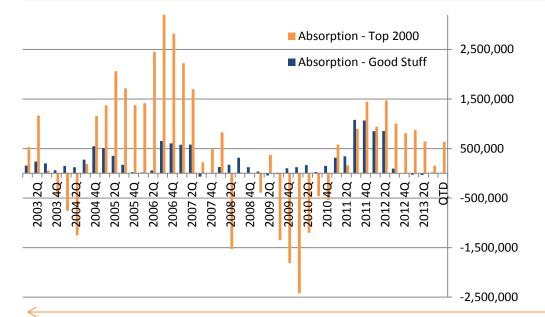
Charlotte's vacancy for the Good Stuff at sub-seven percent is the third lowest of all the MSA's we researched. Steady declines even during the recession have helped make it one of the more attractive tertiary markets for investors focus.



Asking rates have fluctuated for both subsets and have run in lock-step. They went up 12%, then down 20%, now they're back up to 2003 levels.

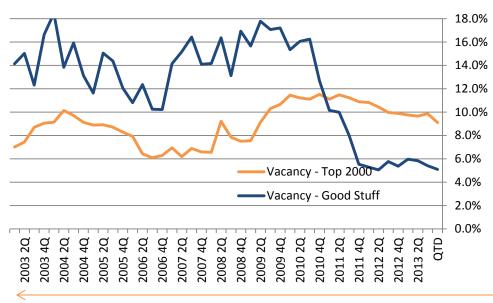
The rents are off 9% from their peak, so we feel this market does have room for solid growth in 2014.

## MSA INDUSTRIAL OVERVIEW - RALEIGH/DURHAM



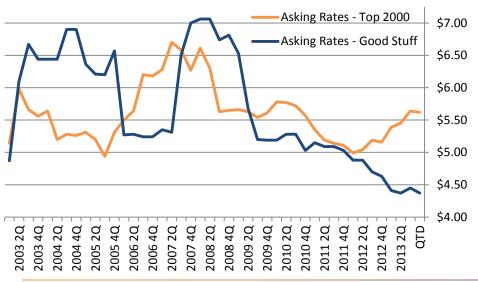
Net absorption has been slow and was basically flat for the Good Stuff and the Top 2000 as a percentage of inventory.

Despite this, they have only had one or two quarters where the Good Stuff had negative absorption and it was minimal then. It is also the second smallest market for the Good Stuff and third smallest for the Top 2000.



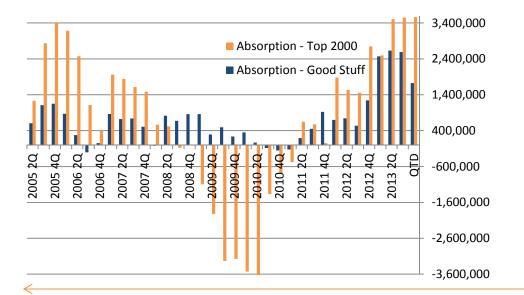
Since late 2010 the Good Stuff has declined extremely fast, which coincides with the strong net absorption for 2011 as shown in the graph above. With vacancy under 6% for this subset, it's only a matter of time before asking rates (below) begin to increase.

This is one of the top tertiary markets to focus on because of the declining vacancy, room for rental growth and strong history of net absorption.



Raleigh/Durham has had the largest decrease from peak to trough asking rental rates for the Good Stuff at 38%! They are still on a steady decline, however, with vacancy bottoming out, this market should recover dramatically over the course of the next 5 years.

## MSA INDUSTRIAL OVERVIEW - RICHMOND

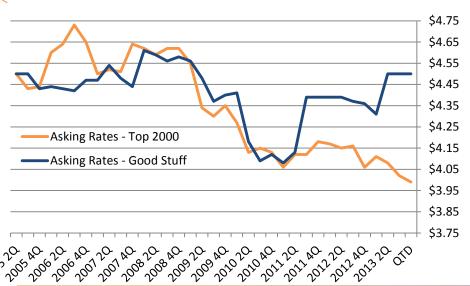


Richmond crushed it in 2013, absorbing 15% of its inventory for the Good Stuff and just over 3% for the Top 2000. This put it in first place for both subsets by a very large margin. New Orleans was 2<sup>nd</sup> with 6% of its Good Stuff as a percentage of inventory being absorbed.

The MSA needed this strong recovery because of severe losses in 2009/2010.



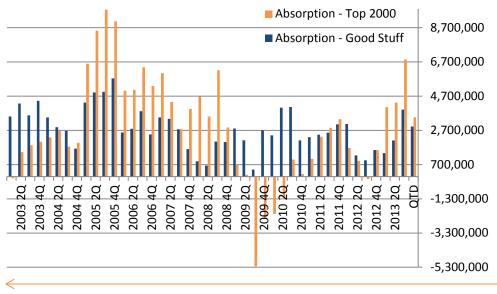
It's no surprise that the vacancy rate for the Good Stuff is sub 3% given the strong absorption figures above. It has been on a steady decline since 2005.



Although asking rates for the Good Stuff have gone up, we think there is much more room for rental rate growth. Although asking rates are basically at their peak, with a vacancy factor of sub 3%, developers should be putting shovels in the ground here. There is only one 80,000 SF building under construction there and it is 100% pre-leased.

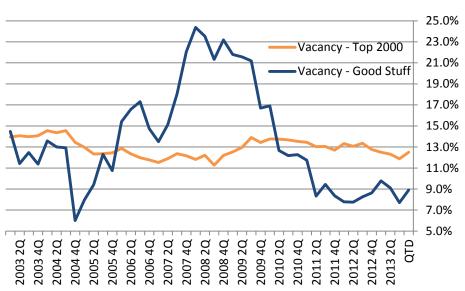
Asking rates are similar to other markets (Orlando fore example) that already have spec construction under way.

## MSA INDUSTRIAL OVERVIEW - MEMPHIS

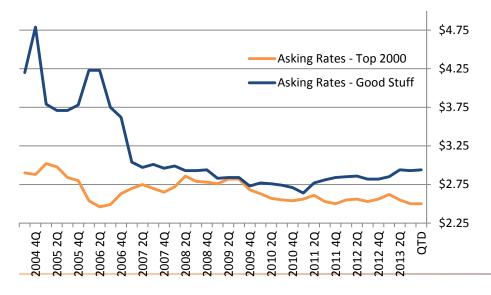


Memphis is one of 5 areas we analyzed that has never had a trailing 4 quarters of negative absorption when focusing on the Good Stuff. In fact, even the Top 2000 has performed very well recording only 3 quarters of net negative absorption.

Memphis also has the largest average building size for the Good Stuff, averaging a whopping 450,000 SF!

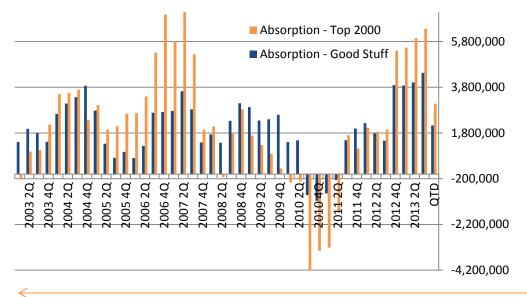


Vacancy has decreased nicely since 2007 for the Good Stuff, while it has remained very consistent for the Top 2000.

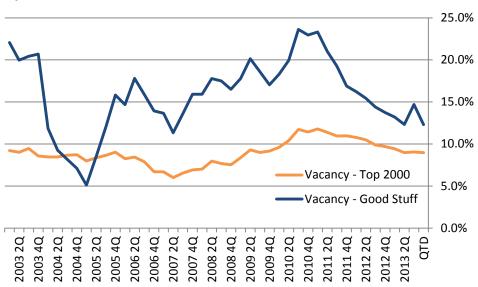


Asking rates in Memphis for the Good Stuff have come down dramatically from early 2004. However, since 2006, they have remained flat as has the Top 2000. Both subsets have the lowest asking NNN rates in the Southeast.

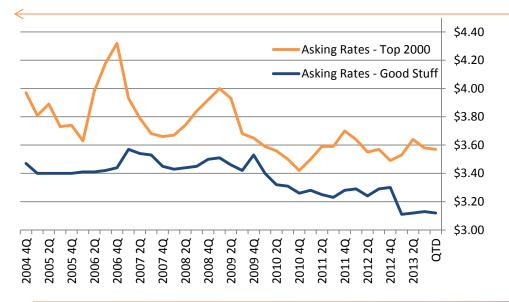
## MSA INDUSTRIAL OVERVIEW - NASHVILLE



Net absorption has spiked several times in the past and has most recently had a great 2013, absorbing over 1.5% of the inventory of the Good Stuff. However, if we were to go back to the previous trailing 4 quarters, we see that number almost doubles.



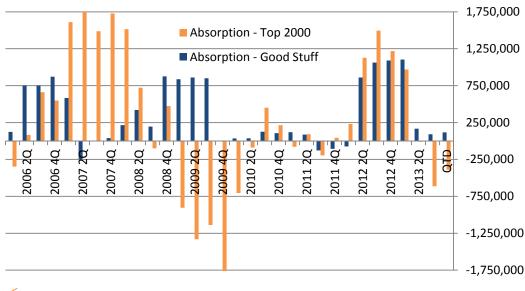
Vacancies in Nashville have remained consistently higher for the Good Stuff but have been on a steady decline. The MSA fits right into the middle of the pack for both subsets when focused on vacancy throughout the region.



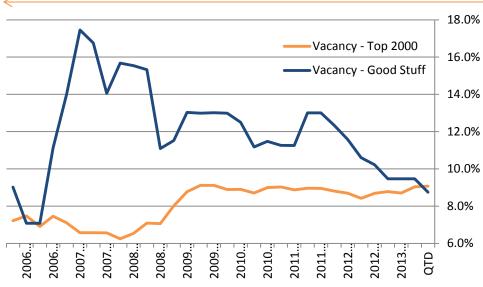
Asking rates for the Good Stuff are roughly 14% below that of the Top 2000 and has remained like that since at least 2004. Both asking rates are at the low end of the spectrum for all MSA's analyzed.

The Good Stuff is off 11.6% from its highs and appears to be bottoming out. With vacancy continuing to decline, this could be an MSA that turns in 2014/2015.

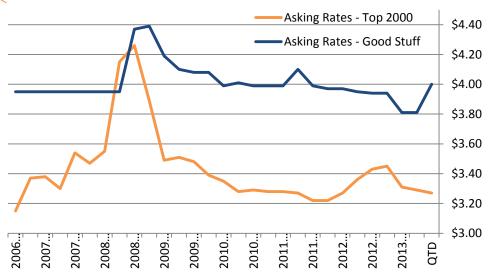
## MSA INDUSTRIAL OVERVIEW - BIRMINGHAM



Unfortunately, Birmingham was one of only two MSA's that had negative net absorption for the trailing 4 quarters of the Top 2000 (Charleston was the other). Fortunately though it was less than .5% of its current inventory that was lost.



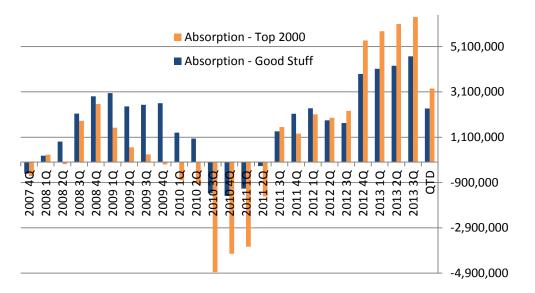
Vacancy has declined nicely for the Good Stuff, and because of this Birmingham
 should see some rental rate increases in 2014/2015. Rental rates are still below
 levels that make speculative development difficult so we see these
 figures as a healthy recovering market.



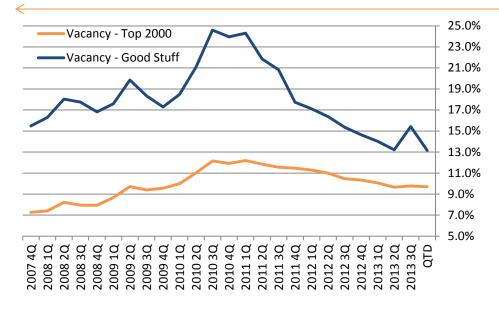
Rental rates have remained almost unchanged for the Good Stuff. A slight \$4.00 run-up in 2008 occurred, but they were brought back down relatively quickly.

There is a 25% premium for rents on the \$3.60 Good Stuff vs. the Top 2000.

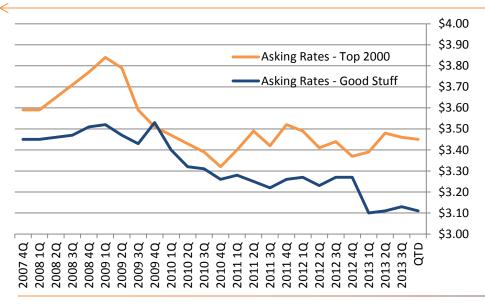
# MSA INDUSTRIAL OVERVIEW - NEW ORLEANS



New Orleans had a great year for the Good Stuff, absorbing over 5% of its current inventory. This is impressive considering that when looking back at the previous quarters in the beginning of 2013, they absorbed almost twice that.



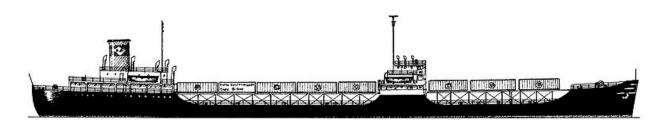
The net absorption for the Good Stuff outlined above becomes clearer when looking at the vacancy rate here. It has gone from almost 25% to 13% in 3 years. Vacancy for the Top 2000 has remained consistent even during the recession.



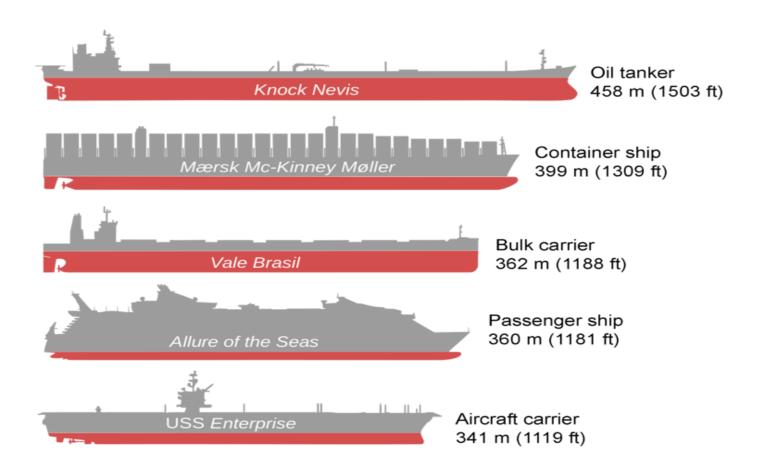
Although vacancy and net absorption have shown extremely good signs in 2013, asking rental rates for the Good Stuff continues to decline. We expect this to turn around in 2014/2015. Rental rates are off almost 12% from their peaks. Since New Orleans has the second lowest asking NNN rates behind Memphis, we expect speculative development to remain in check.



The logistics industry has come a long way since 1956 when a ship named the Ideal X set sail from Newark en route to Houston with 58 standardized containers and was the genesis of the modern term of "intermodalism."



The ships themselves have changed quite a bit as the length of the Ideal X was 524 feet and had a 30 foot beam. Today's Super Post Panamax ships owned by Maersk are 1,309 feet long, 190 feet wide and carry a maximum of over 18,000 standardized containers. Of equal importance is the cost to ship goods. The Ideal X cost its shippers roughly 15% of the total price of the goods being transported. Today, on Maesrk's ships, the costs are less than 1%.



Rank	Port	2012 TEU VOLUME
1	LA/Long Beach	14,123,376
2	New York/NJ	5,529,913
2	Savannah	2,966,221
4	Oakland	2,344,424
5	Hampton Roads	2,105,886
6	Houston	1,922,529
7	Seattle	1,869,492
8	Tacoma	1,711,134
9	Charleston	1,514,585
<mark>10</mark>	Everglades	926,180
<u>11</u>	Jacksonville	923,660
<mark>12</mark>	Miami	909,197
13	Baltimore	677,876
<mark>14</mark>	New Orleans	464,834
15	Wilmington (DE)	299,180
16	Philadelphia	273,190
<mark>17</mark>	Wilmington (NC)	270,792
<mark>18</mark>	Palm Beach	228,438
<mark>19</mark>	Mobile	218,844
20	Gulfport	202,315
21	Boston	187,747
22	Portland	183,202
23	San Diego	102,156
24	Hueneme (CA)	92,007
25	Freeport	72,272
<mark>26</mark>	Panama City	41,456
<mark>27</mark>	Tampa	39,882

Our report focuses on the largest Ports of the Southeastern US and the ones with the biggest impact on industrial real estate demand. The table to the left highlights the continental United States largest ports ranked by 2012 TEU volume.

Those highlighted are situated in the Southeast. What's interesting is that the total annual TEU volume of the 7 West Coast ports is 20.5M TEU's and the total of the remaining 20 non-West coast ports is 19.8M TEU's. LA/Long Beach combine for almost 70% of the volume on the West coast.

Massive on-dock intermodal facilities at LA/Long Beach are able to handle the largest of ships that enter the US directly from China. Cargo is then transported to the Inland Empire, broken down, re-packaged, and shipped out via rail to the rest of the country.

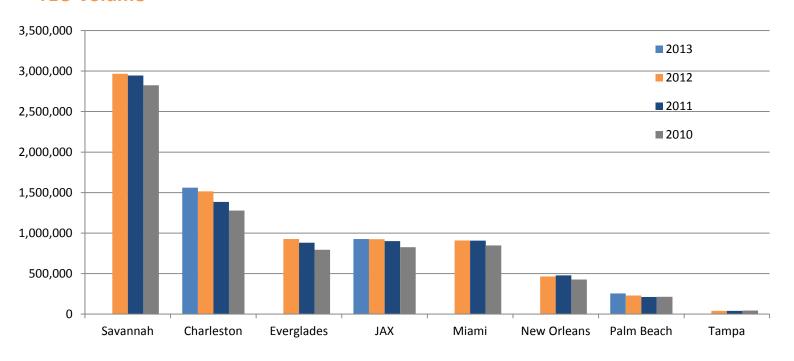
Finally, this report briefly touches on the ports from a tonnage standpoint in the following few pages, but because tonnage does not correlate to industrial warehouse demand it is not a focus for us.

America's top trading partners in 2012 for waterborne freight

<b>Exports</b>		TONS
1	China	92,451,000
2	Japan	42,019,000
3	Mexico	38,962,000
4	Netherlands	28,514,000
5	Brazil	25,382,000
Imports		TONS
Imports	Saudi Arabia	
•	Saudi Arabia Mexico	
1		69,519,000
1 2	Mexico	69,519,000 66,362,000

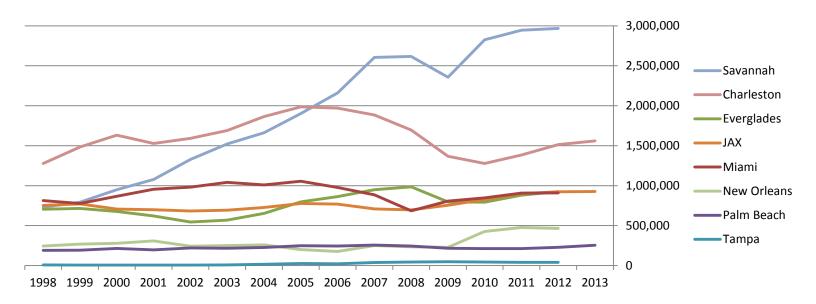


#### **TEU Volume**



When analyzing year-over-year growth for the Southeastern ports, it is interesting to note that all of the ports have remained very steady throughout the years with the exception of Savannah, which has quadrupled in size within the last 15 years. The table on the right shows 15 year growth while the chart below shows the annualized growth at each port.

Port	15 year growth
Tampa	397.72%
Savannah	305.99%
New Orleans	90.02%
Everglades	31.49%
JAX	22.53%
Palm Beach	20.35%
Charleston	18.56%
Miami	11.73%



There are two main ways to categorize port statistics: by the number of TEU's or by tonnage. Industrial owners are mostly concerned with the number of TEU's since that is what ends up in their warehouses. The port rankings by the number of tons of materials that pass through it each year yield dramatically different results. 2011 is the most recent year that the government compiled data and rankings for North American ports by tonnage. The table below summarizes the top ports.

Rank	Port	2011 Tons (Millions)
1 S	outh Louisiana	246.5
2 F	louston, TX	237.8
3 N	IY/NJ	139.2
4 L	ong Beach	80.3
5 N	lew Orleans	77.2
6 B	eaumont	73.7
70	Corpus Christi	70.5
8 L	os Angeles	65.0
9 F	luntington - Tristate	58.6
10 B	aton Rouge	57.9
11 T	exas City	57.8
12 N	Nobile	55.6
13 L	ake Charles (LA)	54.2
14 P	laquemines (LA)	54.1
15 N	lorfolk	47.4
16 B	altimore	44.9
17 P	ascagoula (MS)	36.9
185	t. Louis	36.5
19 S	avannah	35.5
20 🛭	ouluth (MN)	35.1
21 P	ittsburgh	33.8
22 T	ampa	31.4
23 P	hiladelphia	30.6
24 P	ort Arthur	30.3
25 V	aldez (AK)	29.8
26 S	eattle	26.6
27 P	ortland	25.5
28 <sup>N</sup>	lewport (VA)	25.2
29 R	tichmond (CA)	24.3
30 T	acoma	24.2
31 F	reeport	23.3
32 P	ort Everglades	21.0
33 0	Chicago	20.4
34 N	Narcus Hook (PA)	18.8
35 C	Dakland	18.5
36 B	Soston	18.4
37 C	Charleston	17.9
38 P	aulsboro (NJ)	17.6
39 J	acksonville	16.8

When analyzing tonnage, the main products are oil, minerals, agricultural products, etc. For example, the number one port, South Louisiana spans 54 miles along the Mississippi River and handles 43.7M tons of soybeans from the Midwest, being exported to other countries, most notably China.

Petroleum and petrochemicals are other products that add to tonnage. Consider Port Everglades in Broward County, FL. They ranked 32<sup>nd</sup> on the list, importing 21 million tons of fuel and they serve as the main fuel farm for almost all of South Florida.

Tampa ranks  $22^{nd}$  on the list because of its export of phosphates from the region. Savannah made the list at  $19^{th}$  due not only to the massive amount of weight associated with the 3 million TEU's, but also the amount of Ro-Ro (roll on - roll off) traffic associated with all of the automobiles they import.





The Port of Savannah ranks third in the country for the most containerized cargo handled. This is an amazing accomplishment considering it has one of the shallowest waterways at 42' and roughly 21 miles from the outer buoy to berth. Savannah basically services the Atlanta MSA and does this very efficiently via two class I railroad facilities on-terminal (Norfolk Southern & CSX). The main terminal for containerized cargo is the Garden City Terminal which contains an astonishing 1,200 acres of land, 116 rubber-tired gantry cranes, and 27 ship to shore cranes which combined has the ability to double the current capacity of throughput. There is also the Ocean Terminal which has breakbuilk and RoRo facility.

Studies have been completed and Savannah will dredge their harbor, but only to an estimated 47' which will fall 3' short of the 50' minimum depth for fully laden post-Panamax ships. Whether these new ships will be fully laden by the time they reach the East coast remains to be seen. The cost is estimated at \$631M. Compare this to the \$180M that Port Miami is spending on their dredging project. This is due in large part to the long length that must be dredged in Savannah.

#### Additional facts about the Port of Savannah:

- Represents 7.8% of Georgia's GDP
- Employs 8.3% of the entire state's employment
- \$67B in sales represents 9.5% of Georgia's total
- Handles 40% of containerized poultry exports

#### Savannah's top Imports/Exports

Exports	TEU's
1 Wood pulp	178,654
2 Food	157,531
3 Paper	144,710
Imports	TEU's
1 Furniture	143,412
2 Retail Goods	132,244
3 Machinery/ Appliances	121,482





One of the reasons the Charleston Port has so much volume is because it is comprised of five separate terminals including: Wando Welch, North Charleston, Columbus Street, Union Pier, and Veterans.

Wando Welch is the largest in terms of volume of TEU's and tonnage. From outer buoy to berth is roughly 9 miles. Combined with the North Charleston Terminal located 7 miles apart from each other, there are over 1,500 Reefer slots, 900 acres, and 6,200 linear feet of berth space.

Columbus Street and Veterans Terminal offer Ro-Ro, Breakbulk, and Project Cargo while Union Pier is for passenger cruise traffic.

South Carolina Ports are also underway with an inland port facility located in Spartanburg County, 212 miles from the port of Charleston. BMW has agreed to take up about half of the port's initial capacity and it opened for business in late 2013.

The Port of Charleston is working in conjunction with the U.S. Army Corps of Engineers to look at dredging to 45', although the study is not expected to be complete before 2015.





Port Everglades is the port in Broward County, located just south of Ft. Lauderdale and just to the West of the Ft. Lauderdale/Hollywood International Airport. It generates nearly \$26 billion worth of business activity annually (\$24 billion was contributed by cargo operations) and supports 212,000 jobs directly and indirectly (189,000 of those were because of cargo operations). Originally known as Lake Mabel it was officially established as a deep water port in 1927. At the initial dedication ceremony on February 22, 1928, President Calvin Coolidge was to push a button from the White House detonating explosives to remove the rock barrier separating the harbor from the ocean, however, nothing happened. The barrier was removed a few days later. In the 1940's the port was used by the U.S. Navy. In the 1970's the port became the first Foreign-Trade Zone in Florida.

Its proximity to the Ft. Lauderdale International Airport significantly aids in the cruise ship business and is the third busiest cruise port in the world behind Miami and Port Canaveral, although each of these three passenger cruise ports are extremely close in terms of volume. 3.69 million cruise ship passengers passed through Port Everglades in 2012, 3.76 million used Port Canaveral and 3.77 million embarked PortMiami. In order to gain more market share, the port is spending \$54 million on renovation of four cruise terminals, one of which is the largest passenger cruise terminal in the world with 240,000 SF. The port is also the home berth of the two largest ships in the world, the Allure of the Seas and Oasis. The cruise industry represents roughly 40% of the revenues for Port Everglades.



### PORT EVERGLADES



From a logistics/industrial standpoint, it is important to note that roughly 18% of the revenues for Port Everglades stems from petroleum which translates to 14.8 million tons (105 million barrels). This is much greater than any other port in South Florida. Every day, more than 12.5 million gallons of petroleum products (jet fuel, gasoline, crude, diesel, etc.) are delivered to the port which then distributes to 12 counties in Southern Florida including all 3 International airports.

Port Everglades has a proposed capital improvement budget over the next 4 years to deploy roughly \$530 million. Port Everglades is not in a position to have their port ready by the time the Panama Canal expansion is complete to handle fully laden ships. The Port currently can accommodate the post-Panamax ships however the ships must be lightly loaded due to their draft. To handle these ships the port does already have 7 Samsung post-Panamax cranes in operation and 4 more are proposed once the dredging is complete.

There are 3 main projects that Port Everglades is undertaking that address the increasing cargo demands of the port: Intermodal Container Transfer Facility (ICTF), channel deepening and widening, and the Southport turning notch extension.

#### Intermodal Container Transfer Facility (ICTF) - \$53M project

In cooperation with Florida East Coast Railways (FEC) the ICTF began construction in January of 2013 at a total cost of \$53 million. The port dedicated roughly 42 acres of land valued at \$19 million (\$450k/acre), FEC contributed \$5M and the balance of the project is being funded with State funds. Expected completion date is June 2014. FEC has signed a 30 year lease for the land commencing upon completion. The ICTF project will bring two new rail tracks under the Florida Department of Transportation Eller Drive Overpass. These new rail tracks expand into six working tracks totaling approximately 18,000 linear feet (LF), which will accommodate a train up to 9,000-LF. This near-dock rail is vital in South Florida becoming a competitive logistics hub according to all major shipping companies. Drivers commonly delayed at the railroad crossing at State Road 84 and Andrews Ave will directly benefit because the trains will be assembled at Port Everglades instead of at the rail yard on Andrews Ave.



## PORT EVERGLADES

#### Channel Deepening & Widening - \$320M project

The process of dredging to 50' to accommodate the post-Panamax ships is a lengthy process and requires congressional authorization. Port Everglades hopes this will come soon, although studies have been on-going for the past 20 years. If it does, construction on this \$320 million project will commence in November 2015 and will target a completion date of October 2017. The funding for this project stems 100% from public coffers broken down as roughly \$190 million in federal funds and another \$98 million coming from the State with the balance funded by the port itself.

#### Southport Turning Notch Extension - \$122M project

This project has a start date targeted for 2016 and a completion date of December 2017. The \$122 million project is funded primarily from the State with approximately \$30 million funded by the port. The project will lengthen the existing deepwater turn-around area for cargo ships from 900 feet to 2,400 feet at the existing depth of 42' which will allow for 5 new cargo berths. A critical part of the Southport Turning Notch extension includes replacing 8.7 acres of an existing mangrove conservation easement with a 16.5 acre upland enhancement of approximately 70,000 new mangroves, plants, and seeds, as well as completing a number of environmental improvements in West Lake Park.

## **Current Berthing Arrangement**



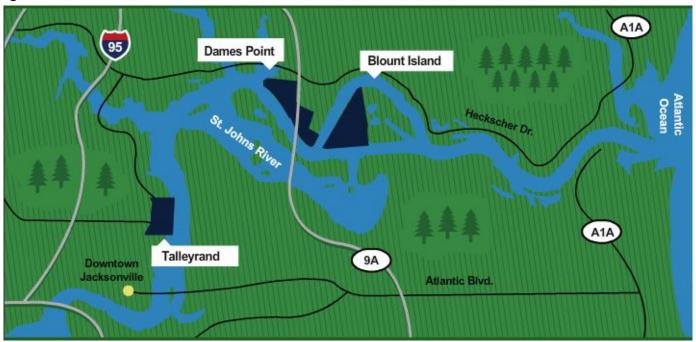
## Future Berthing Arrangement





The Port of Jacksonville, or JAXPORT as it is commonly referred to, consists of three main terminals including Blount Island, Dames Point, and Tallyrand. These three terminals combined for 8.2M tons of cargo in 2013 and more than 926,000 TEU's and was the number one vehicle export port in the United States (Ro-Ro).

Shippers into Jacksonville have three rail operators to choose from, two of which are Class I rail systems. CSXT and Norfolk Southern each have 36 daily trains and Florida East Coast Railways (FECR) also services locations throughout the East Coast of Florida.



#### **Blount Island**

Located 9 miles from the Atlantic Ocean, this terminal has 6,000 linear feet of deep-water berths. At 754 acres, it is the largest terminal at JAXPORT and one of the largest import/export facilities in the nation for vehicles (Ro-Ro).

#### **Dames Point**

Situated on 158 acres, 10 miles from the Atlantic Ocean (half the distance of Savannah's Garden City Terminal) this terminal has two 1,200 linear foot berths and six new Panamax container cranes. JAXPORT is currently developing an intermodal facility at this location to facilitate direct vessel to train transfers.

#### **Tallyrand**

The Tallyrand Terminal (TTR) is a 2 mile short line railroad serving the Jacksonville Port Authority and interchanging with CSX Transportation and Norfolk Southern. Commodities transported include automobiles, chemicals, intermodal containers, and pulp and paper. This facility however is located 21 miles inland from the Atlantic Ocean.

The TTR was acquired by Genesee & Wyoming, a private company in 1996.

## JACKSONVILLE

Jacksonville's Port is currently assessing, via a study with the U.S. Army Corps of Engineers, what the economic benefits would be to dredge the 11 mile stretch of the St. Johns River to 47 feet. As of January 2014, the results of that study had not been released.



While the federal channel along the St. Johns River is maintained at a depth of 40 feet, the U.S. Army Corps of Engineers is currently managing a second harbor project in the area. This second project will improve the flow of the St. Johns River at Mile Point, where intracoastal and river currents pose navigational hindrances for deep draft vessels during certain tidal conditions. In January 2013, Florida Governor Rick Scott announced a commitment of \$38 million in state and local funding to complete the Mile Point project. The investment enables JAXPORT to jumpstart the final phase of fixing this navigational hazard in the St. Johns River.

As ships and loads become larger, so do the demands on ports; and as the Intracoastal Waterway and St. Johns River converge at Mile Point, the largest, deep-draft container vessels calling JAXPORT's terminals must enter the harbor at high tide. Completing the Mile Point project will ease this restriction, saving carriers and shippers time as these ships unload and load at JAXPORT terminals.



## PORT//II/A//II

PortMiami is the second largest economic driver of Miami/Dade County behind only Miami International Airport. Through its cargo and cruise activities, it contributes over \$18B annually to the South Florida economy and helps employ both directly and indirectly over 180,000 individuals. It is unique in that it is situated on an island (actually, formerly it was 3 spoil islands known as Dodge, Lummus and Sams islands) that is a total of 520 acres.

4 standard types of cargo operations exist at Port Miami: Roll-on/roll-off (Ro / Ro), Lift-on/lift-off (Lo / Lo), Break-bulk, and vehicle exports. In addition, there is a state of the art fumigation facility which is attractive to importers of perishables. The perishable importers also benefit from the 1,000 refrigeration plugs and nearly 900 refrigerated containers daily. Finally, PortMiami instituted a system dubbed ELMO (Enforcement Link to Mobile Operations) which allows for some of the fastest turnaround times in the country for processing perishable containers.

While it is known as the Cruise Capital of the World (due to the fact it has been the number one cruise port for over 4 decades), it is undertaking massive capital projects that should make it one of the strongest East The impetus for the current Coast cargo ports. upgrades is the expansion of the Panama Canal, scheduled for completion in late 2015. Miami is the closest port in North America to the Panama Canal and a logical geographical choice for shippers to berth. In order to attract these post Panamax ships and capture the increased cargo traffic, a port must meet three basic requirements: channel depth of 50' with sufficient channel width and turning basin, cranes capable of handling the sheer size of these post Panamax ships, and docks engineered to handle the larger cranes.



## PORT MIAMI

PortMiami will have a huge advantage over its nearest competitor, Savannah, in 2015 due mainly in part because Savannah is currently only dredging their river to 47', meaning the larger ships will only be able to enter the port at high tide. A second factor is the "buoy to berth" analysis. From the outermost buoy to the berth at PortMiami the distance is only 2.5 nautical miles. Compare that to the nearly 20 nautical miles a ship must travel to get to berth in Savannah. Finally, the partnership with Florida East Coast Railways (FEC) and subsequent on-dock rail (outlined below) means it will be quicker for cargo to off-load in Miami and railed North vs. entering at Savannah.

PortMiami has addressed not only the basic requirements to become post-Panamax ready but has gone further by implementing a larger global logistics plan that includes rail upgrades and truck traffic upgrades. These projects are listed below and together have a combined cost of nearly \$1.3 billion.

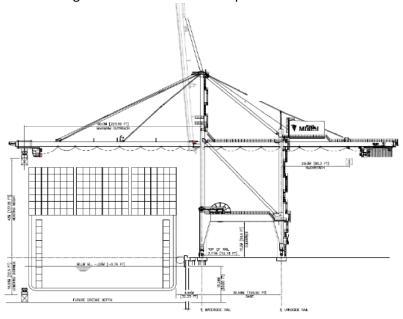
#### The Deep Dredge - \$180M project

After years of studies and planning, in the summer of 2013 the contract to dredge the port basin to 50' was awarded to Great Lakes Dock & Dredge. The dredging is set to begin in early 2014 and will be completed in advance of the Panama Canal opening in 2015. PortMiami is one of only three ports on the Eastern Seaboard that has received congressional authorization for the deepening of its harbor. \$77M of funding came from the Florida Department of Transportation.

#### Crane and Dock Upgrades - \$107M project

Currently PortMiami has 16 operational cargo cranes, two of which are already designated Super post-Panamax. In order to accommodate the larger ships, four new electric cranes are being installed. Once installed, 3 of the existing cranes will be decommissioned. Total costs for the crane upgrades is \$42 million. The port is also strengthening its cargo bulkhead seawalls to accommodate the 50' depth and accept the four new cranes. These new panels are precast fascia and PortMiami is the first US deep-water port to utilize the technology. Total cost for the upgraded seawall is \$65 million.





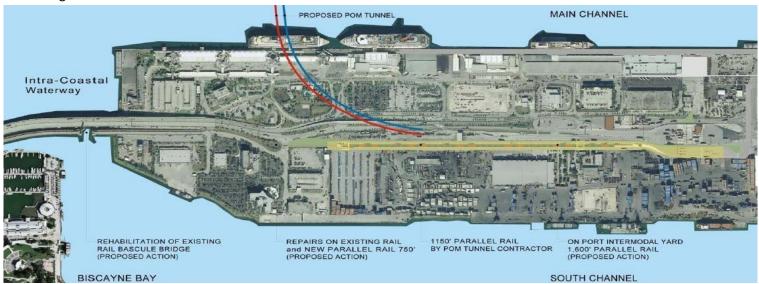
#### On-Dock Rail - \$50M project

Probably one of the least publicized projects that PortMiami has undertaken arguably has the greatest impact. In 2005 hurricane Wilma partially destroyed a rail bridge that connected PortMiami to the mainland thus interrupting on-dock rail service. Since 2005 all cargo coming into the port has left via truck. Thanks to a federal grant (TIGER II) in the amount of \$23M, a \$11M grant from the Florida Department of Transportation, \$4.8M from PortMiami, as well as \$11M from Florida East Coast Railways, there is a project underway with 4 main components.

1) Repair the bascule bridge that was damaged by hurricane Wilma in 2005 thus re-establishing rail service to Dodge Island, site of PortMiami.

## PORT MIAMI

2) Replacement of existing on-dock rail with three -3,000 linear feet of parallel tracks and an intermodal yard consisting of 14.5 acres.

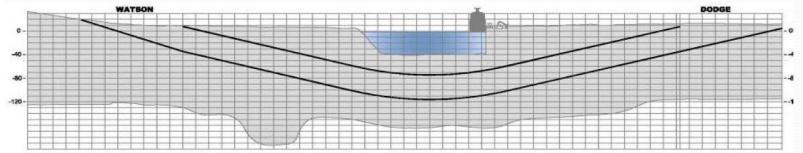


- 3) Reconstructing the off-port connection at Little River (79<sup>th</sup> St) which will allow trains to move from PortMiami to the FEC Hialeah yard without stopping and making reverse moves as presently required.
- 4) Improvements at the Hialeah Yard will include new signaling equipment which will allow trains to enter the yard at speeds of up to 30 miles per hour. This rail yard consists of 432 acres and is adjacent to the Miami International Airport.



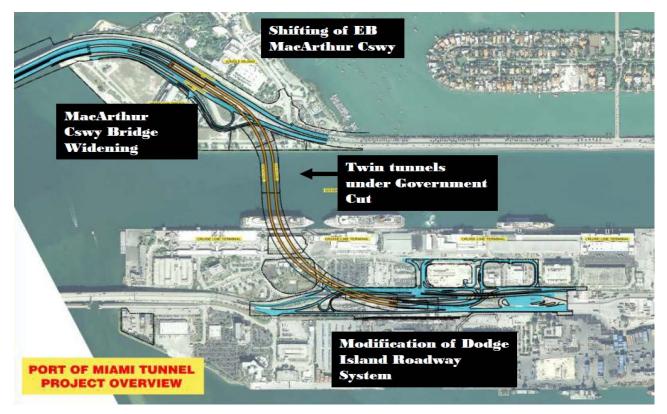
## PORT MIAMI

#### The Tunnel - \$900M project



Due to the rail system being inoperative and 100% of cargo being transferred via truck on and off the port, nearly 16,000 vehicles per day (7,000 trucks/buses) travel to and from the port via already congested downtown Miami streets. Estimates for truck traffic are doubled by the year 2035. To alleviate the congestion as well as the expected rise in TEU's PortMiami has devised a massive public works project that provides a direct connection from Dodge Island (PortMiami) to Interstate 395, which connects directly to I-95, the main North/South interstate in Florida. The tunnels are 3,900 feet long and are 40' under the bottom of the channel. Construction of this tunnel began on May 24th, 2010. In the spring of 2011 a Tunnel Boring Machine (TBM) nicknamed Harriet (compliments of the local Girl Scout Troup after the iconic Harriet Tubman) arrived from Germany, which is 43 feet in diameter, and has over 1,000 pieces. Once completed in May of 2014 this tunnel will allow trucks direct access to the Interstate system and eliminate all downtown congestion.





## PORT OF PALM BEACH



Located roughly 80 miles north of Miami and 135 miles south of Port Canaveral, the Port of Palm Beach (POPB) boasts one of the shortest buoy to berth times of around 20 minutes, however, operating drafts for vessels must be below 33'. POPB is the 4<sup>th</sup> busiest container port of Florida's 14 deepwater ports behind Miami, Port Everglades, and Jacksonville moving just over 213,000 TEUs.

Unlike other ports in South Florida and the US, POPB is mainly an export port with 80% of its cargo going to the Caribbean. In fact, the Port of Palm Beach supplies 60% of everything consumed in the Bahamas. The other advantage POPB has over Port Everglades and PortMiami is the ability to handle smaller container vessels and certain break bulk and bulk commodities. The other two ports also do not have the proximity to rich agricultural areas for exporting those products.

In addition to intermodal capacity, the POPB is a major hub for the shipment of bulk sugar (almost 900,000 tons or half of the total tonnage). The port is also the only port in South Florida operating an on-dock rail system with pier-side box, hopper and intermodal cars operating 24 hours a day. There are 6 miles of track for intermodal transfers and handling. These tracks connect to the Florida East Coast Railway (FEC) as outlined later in this report.

Major capital projects for the POPB are minimal with the major one being the Slip #3 re-development. The improvements for Slip #3, constructed in the mid 1950's, are scheduled to be complete by 2014-2015 and will provide the Port with additional "roll on/roll off" capability. Funding is provided by a \$10 million TIGER Grant similar to the one PortMiami received, as well as State funds of \$10 million and the balance directly from the port. Total projected cost is over \$27

million.





The FAA defines air cargo as freight and mail. It is usually categorized as either domestic or international. For purposes of this report, we have focused on only two airports in the Southeast, Memphis and Miami as they are the largest and contribute the most to the industrial markets.

Atlanta ranks third in the Southeast but handles roughly 1/3<sup>rd</sup> of Miami which is ranked second in the region. The main reason for Atlanta's success is because it is the busiest passenger airport in the world. Many times, air cargo is flown in the empty belly space of commercial air carriers, therefore the sheer number of flights that Atlanta handles gives it volume for air cargo.

Characteristics common to almost all air cargo are that they are more expensive, have time sensitivities and are lightweight. Common air cargo products include perishables such as fruit, fish, vegetables, and flowers. If shippers are not constrained by these factors, they will almost always ship via sea, rail, or truck as air cargo is the most expensive form of transportation. Reports vary, but air transportation cost up to 10 times the cost of shipping via truck and 15 times the cost to ship by sea. Time is the critical determinant in those equations. Air cargo can arrive from Hong Kong in less than 24 hours while shipping through the Panama Canal may take up to 3 weeks to reach a Southeastern destination.

Rank	Continental US Busiest Freight Airports (2012)	Total Cargo (Tons)
1	Memphis	4,015,997
2	Louisville	2,168,365
3	Miami	1,929,889
4	Los Angeles	1,780,998
5	JFK	1,283,450
6	O'Hare	1,254,183
7	Indianapolis	989,103
8	Newark	744,375
9	Atlanta	646,481
10	Dallas Ft. Worth	603,050

Freight forwarders (essentially cargo brokers)handle about 70% of international cargo. They will typically reserve blocks of belly space on passenger aircraft.

Domestic air cargo is dominated by integrators such as FedEx and UPS. These companies handle roughly 90% of all domestic air freight.



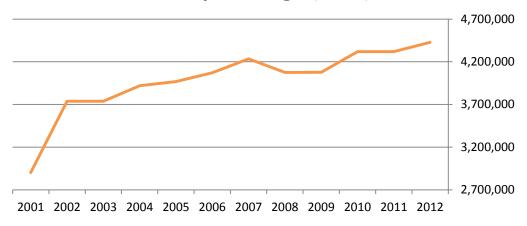


Memphis International Airport, "America's Aerotropolis" is a world-class facility serving more than 6 million passengers a year. It is the only airport in North America considered to be an "aerotropolis," an airport-integrated region extending outward from the airport in strings and clusters of airport-linked businesses and their associate residential complexes.

Memphis is the second largest air cargo airport in the world, behind Hong Kong and it's no surprise that this is solely because of FedEx. In fact, of the 3.9M tons of cargo handled, 99% is handled by FedEx! FedEx leases 30.6 million square feet of land (700 acres) from the airport currently.



## **Memphis Cargo (Tons)**





Situated on 3,230 acres due west of downtown Miami, Miami International Airport (MIA) provides the Miami/Dade County with a whopping \$33 billion in economic impact, making it the county's largest economic engine. MIA and related aviation industries combine for a total of 273,000 jobs which is roughly one out of every four jobs in the county. It ranks 2<sup>nd</sup> in terms of international passengers in the US and 26<sup>th</sup> in the world. It is the 12<sup>th</sup> largest airport in the US in terms of total passengers and 28<sup>th</sup> in the world.

From a cargo/industrial standpoint MIA is a huge boon to the logistics of South Florida. It is the number one airport in the US for international freight and 3<sup>rd</sup> in the country for total freight. 82% of all US imports from Latin America & the Caribbean flow through MIA as does 81% of all exports to the region. Another way to look at this is that MIA has more direct cargo flights to Latin America than Orlando, Houston, New Orleans, Atlanta, Tampa, and New York's Kennedy airports combined. MIA's total air trade is valued at \$61.5 billion or 96% of the dollar value of Florida's total air imports and exports.

The 96 cargo operators that operate out of

MIA produce the following statistics:

Domestic: 270,433 tons International: 1,821,821 tons Total: 2,092,254 tons



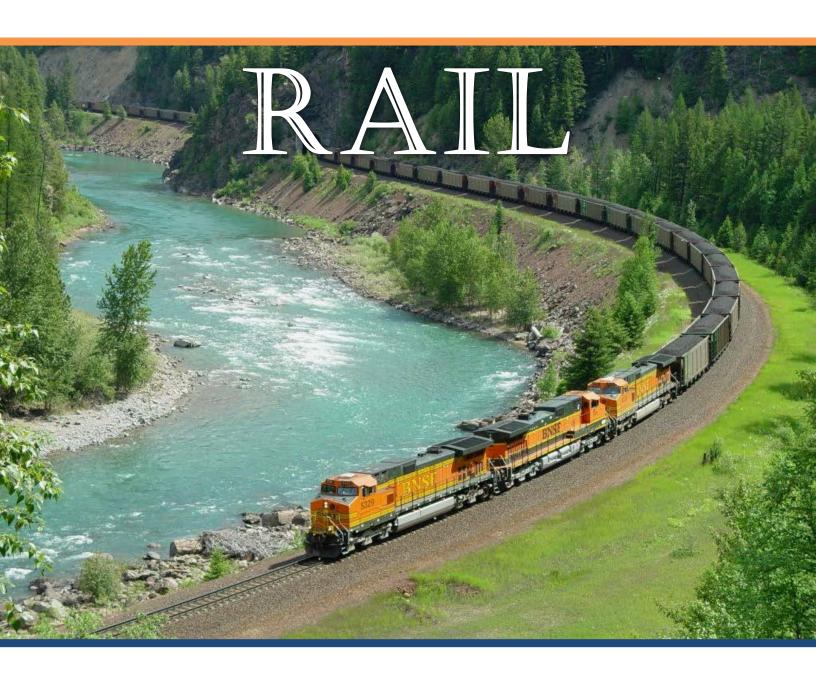
MIA's cargo facilities comprise 17 warehouses with over 2.7 million SF of warehouse and support space. Almost all of the facilities offer airside-to-landside access facilitating multimodal movement of cargo to and from the airport. Additionally, a brand new 800,000 SF facility was built on the Northeast side of the airport to house Centurion Air Cargo, one of the largest carriers of perishable items in the country. This new facility will accommodate 8 Boeing 747's.

Of all the US imports for Fish, Flower and

Fruit/Vegetables MIA handles:

Fish: 53.6% (120,000 tons) Flowers: 89.4% (186,000 tons) Fruit/vegetables: 71.7% (128,000 tons)

While MIA has multiple capital improvements underway, the major one that affects industrial and logistics is the NW 25<sup>th</sup> Street Viaduct Project. A corridor stretching from MIA's Westside Cargo Area to the warehouse district west of the Airport is the access lifeline of MIA's air cargo industry and the primary connector to the Florida Intrastate and Federal Highway System. This corridor handles an estimated 200,000 cargo truck trips annually. MIA has partnered with the Florida Department of Transportation to widen the existing roadway to six lanes and construct an elevated viaduct to improve ground movement of air cargo trucking operations.



## RAIL OVERVIEW

The Rail Systems in the United States are split in to three main classes as follows:

#### Class I:

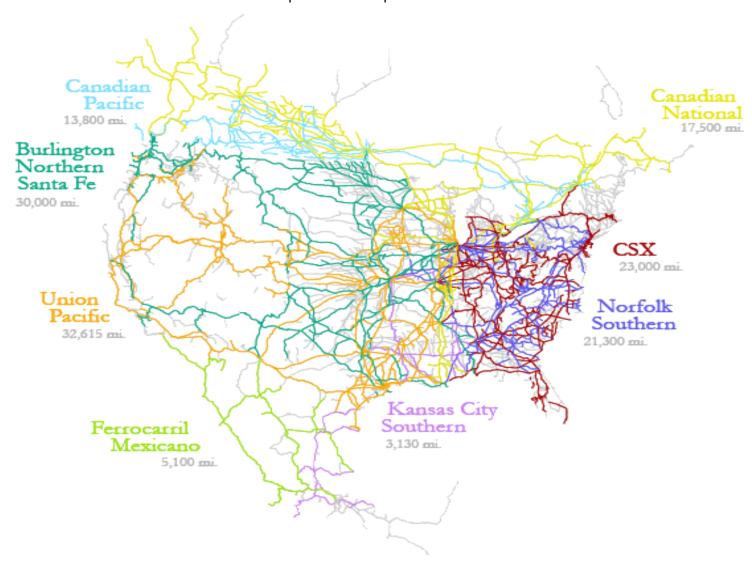
The largest railroads with 2009 revenues in excess of \$378.8M. Located all across the US, these railroad systems account for 70% of the overall mileage and 93% of the freight revenue. There are currently seven Class I railways operating in the US: CSXT, Norfolk Southern (NS), BNSF, Union Pacific (UP), Kansas City Southern (KCS), Canadian Pacific (CP), and Canadian National (CN). **CSXT & NS are the two main Class I operators in the Southeast.** 

#### Class II (Regional):

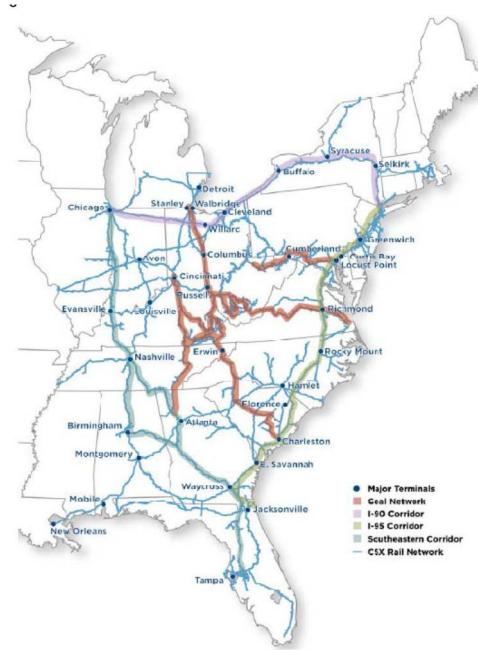
Operators must have at least 350 miles of track and/or revenues in excess of \$40M. Florida East Coast Railways (FECR) for example maintains its Class II status because it has 351 miles of mainline track running along the East Coast of Florida.

#### Class III (Short Line/Local):

These railroads perform only switching and terminal operations. They can be solely owned or jointly between railroads that share trackline at concentration points such as ports.







CSXT operates just in the Eastern half of the US and is a vital lifeline in the distribution of goods. According to their annual reports, they have 4 primary focuses:

- Coal Network Connects the coal mining operations in the Appalachian Mountains with the Northeast & Mid-Atlantic states.
- 2) I-90 Corridor Links Chicago to major markets in the Northeast such as New York and New England. Primarily used for importing goods from the West coast ports through Chicago and into the New England area.
- I-95 Corridor Only Class I rail line along the eastern seaboard south of Washington DC. Used to transport goods (mainly consumer and food products) up and down the eastern seaboard.
- 4) Southeastern Corridor connects Chicago, Nashville, Atlanta and Florida. This line also provides direct rail service between the vast coal reserves of Southern Illinois and the increasing demand for coal in Southern states.

Finally, CSX is headquartered in Jacksonville.



Norfolk Southern also operates a large rail network, throughout the Eastern US. They have identified five strategic corridors in their annual reports, two of which directly affect the Southeast.

First, is what they refer to as the Crescent Corridor which connects the Northeast to Memphis and New Orleans. One of their main objectives with this corridor is to increase train speeds along the route.

The second initiative is the Titusville Corridor which intended to increase train speeds between Atlanta and Central Florida. This corridor has also seen the largest increase in traffic of all of their major corridors since 2009. What's interesting is that they have trackage/haulage rights with Florida East Coast Railways beginning at Titusville, FL. If TEU volume picks up at Port Everglades and Port Miami because of their new on-dock rail infrastructure, be on the lookout for an inland port in the Titusville area.

Finally, and probably most important to industrial owners in Atlanta is the fact that Norfolk Southern operates 250 miles of "straight line" track between Savannah and Atlanta. This allows them to offer extremely quick and reliable service from the Garden City Terminal at Port Savannah to Atlanta. Since TEU volume has increased there so dramatically, two trains per day now service this route.



#### Port Terminology

**Ro-Ro** (Roll-on/roll-off) — Ships that are designed to carry wheeled cargo such as automobiles, semi's, railroad cars, etc. They have built-in ramps that allow the cargo to efficiently be "rolled on and off" while in port.



**Lo-Lo (Lift-on/lift-off)** – Containerized cargo ships that must use a crane to load/offload goods.

**Bulk** – Commodities that are transported unpacked in large quantities such as petroleum, grain, coal, gravel. It is usually poured or dropped with a spout or shovel bucket into a bulk carrier in a ships hold, a railroad car (usually hoppers), or a tanker truck. It is classified as either liquid or dry.



**Break Bulk** – A variety of goods that is neither containerized in intermodal containers nor in bulk such as oil or grains. These goods can be in bags, boxes, crates, drums, pallets, etc. As containerization has grown, the amount of break bulk shipments has steadily decreased.



**Stevedores** – Workers that load/unload ships. Often referred to as Longshoremen, dockers, or wharfies.

#### Port Terminology

**TEU (Twenty Foot Equivalent Unit)** – An inexact unit of cargo capacity often used to describe the capacity of container terminals and ships. A standard-sized metal box is about 20 feet long, 8 feet 6 inches high, and 8 feet wide. Although the TEU is not a measure of mass, some basic conclusion are sometimes drawn that a fully loaded TEU holds approximately 48,000 pounds (24 tons) plus the weight of the TEU itself (tare mass) at roughly 5,000 pounds. It should be noted however that the average imported TEU weighs roughly 9 tons and the average exported TEU weighs 12 tons. Currently it is estimated that there are 27.3 million TEU's worldwide.

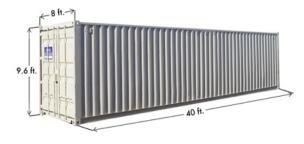
**FEU (Forty Foot Equivalent Unit)** – Containers may also be twice as long or two TEU's stacked next to each other would be equal to one FEU.

**High Cube** – A standard TEU is 8' 6" tall. A High Cube is exactly one foot taller at 9' 6"

**Reefer** – Refrigerated containerized cargo units used for shipping temperature sensitive cargo. They rely on external power to be cooled, therefore, must be constantly connected to either an onshore power source or powered from diesel generators while enroute.









#### Rail Terminology



**Automotive Racks** – Designed to ship domestic and imported automobiles, trucks, SUV's and Minivans



**Box Cars** – Used for crated or palletized freight of all kinds. They are the most common type of rail cars with a variety of features and sizes



**Centerbeams** – Designed to transport bundled building supplies, a center portion secures the product in place



**Covered Hoppers** – Mainly used in the shipment of free flowing dry bulk commodities



**Flatcars** – used for specialized commodities



**Gondolas** – Designed to ship heavy bulk commodities that include scrap metal, aggregates, logs, lumber, etc.



Intermodal – Containers and trailers that transport freight of all kinds



**Refrigerated Boxcar** – Designed to control the temperature of perishable freight such as fresh fruits



**Tank Cars** – Used to ship compressed or liquid commodities

#### 3PL - Third Party Logistics Provider

3PL providers perform any part of a firm's transportation or storage needs including international domestic & transportation, warehousing, freight forwarding, customs brokerage, reverse logistics & more. 75% of 3PL companies have less than 10 employees.

Examples of a 3PL are:

FedEx, UPS, DB Schenker, CT Logistics, Saddle Creek, Crowley, and Americold.

#### **Freight Forwarders**

Private companies that specialize in exporting goods or products. They are essentially fright brokers. These companies control the route of goods from one place to another via sea, air, rail, truck or all of the above, depending on the clients needs. On average they handle about 70% of international freight and 10% of domestic freight.

#### **Customs Broker**

Aid in facilitating the movement of goods through the US Customs at entry points in the US.

#### **Consolidators**

Work closely with freight forwarders to consolidate goods, often from different customers into the chosen transportation method.

#### **Container Freight Stations**

Designed to handle the breakdown of international cargo. Most are bonded and they work closely with Customs Brokers. They can be thought of as the opposite of consolidators.

#### **Freighter Airlines**

Specialize in heavy cargo as opposed to small packages or mail.

#### **Integrators**

Companies that integrate trucking and aircraft services to offer point to point service. They specialize in overnight deliveries. FedEx & UPS are the dominant leaders of this industry.

#### Drayage

Transport of goods over a short distance, This is most used when containerized cargo is transported by specialized trucking companies from ports to distribution centers. These vehicles are known as dray vehicles.

#### **Reverse Logistics**

Operations related to the re-use of products or materials. The process includes the transportation of surpluses as well as products being returned to vendors from buyers.

#### **Match-Backs**

Matching emptied containers (TEU's) with goods or materials for its return trip to port.

#### **Head-haul**

Cargo defining the demand for the transportation. An example is the delivery of televisions to a regional distribution center. The televisions are the main demand for the delivery.

#### **Back-haul**

Cargo helping pay part of the overall cost, often at lower rates. One example is the return of empty containers to the port.

#### **Trailer on Flat Car (TOFC)**

Intermodal terminology used to describe a semi trailer, placed on top of a rail car and transported via rail.

#### **Container on Flat Car (COFC)**

Intermodal terminology used to describe a TEU placed on top of a flat rail car and transported via rail. These can be either single stacked or double stacked.

#### **Bonded Warehouse**

The US Customs & Border Protection office authorizes bonded warehouses for storage or manufacture of goods on which payment of duties is deferred until the goods enter the customs territory. The goods are not subject to duties if re-shipped to foreign ports. There are 11 classes of bonded warehouses.

#### Intermodal

Movement of goods by more than one mode of transport, i.e. airplane, truck, railroad and ship.

#### **Shipping Weight**

Represents the gross weight in kilograms of shipments, including the weight of moisture content, wrappings, crates, boxes and containers (other than cargo vans and similar substantial outer containers such as TEU's.

#### **Tare Weight**

The weight of a ULD and tie down materials without the weight of the goods inside. It is the weight of the empty container.

#### **ULD – Unit Load Device**

Any type of container, a container with integrated pallet, aircraft container or aircraft pallet.

# HFF

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