

# **SOUTH FLORIDA PORTS - THE BATTLE FOR THE SEA IS WON INLAND?**

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## **Introduction**

Capacity increase only at ports facilities without improvements in ports' inland access is not enough for the entire container transport chain to function properly since sea flow generates almost proportional inland flow (Parola and Sciomachen, 2005). While bigger vessels help carriers to reduce voyage cost, these saving are increasingly outweighed by higher port and landside costs (WCN, 2016a). With constantly growing container transports, efficiency of rail and flexibility of road are increasingly needed for inland access to/from the ports. Competition requires ports to focus on their inland access (Roso et al, 2015; Rodrigue et al, 2010) on the demand for services in its traditional hinterland (Bask et al, 2014, Andersson et al, 2016) and also on development in areas outside their immediate market (Rodrigue et al, 2010). Many container ports around the world are involved in implementation and/or development of inland intermodal terminals/dry ports/inland ports to improve their inland access in order to increase their competitive advantage but also to increase the terminal capacity and consequently productivity. Such developments have been observed in China (Beresford et al., 2012), Australia and New Zealand (Roso, 2013), India (Ng and Gujar, 2009), the United States (Rodrigue et al, 2010, Roso et al., 2015), Asia (Hanaoka and Regmi, 2011), Russia (Korovyakovskiy and Panova, 2011), and Europe (Flämig and Hesse, 2011; Henttu and Hilmola, 2011; Monios, 2011, Bask et al, 2014).

However, container ports in South Florida: Port Miami, Port Everglades and Port of Palm Beach keep their container volumes stable or slightly increase without particular engagement in development of their inland access or hinterland expansion. Therefore, the purpose of this paper is to explore why these seaports are not involved in implementation or don't have any particular collaboration with inland ports while many other ports around the world have to work on inland access through collaboration with inland intermodal terminals.

## **Research approach**

For the purpose of this study an extensive analysis of relevant literature was conducted as well as face-to-face semi-structured interviews with relevant actors of the seaports management. Literature related to intermodal transportation, container seaports, and inland intermodal terminals/dry ports/inland ports were reviewed. In accordance with recommendations by Stuart et al. (2002) and given the exploratory nature of the study, semi-structured interviews were chosen to explore the issues as the same allowed the interviewees to introduce new issues and the interviewer to follow up topics more fully. The interviewees were given in advance a checklist of issues/question that were planned to be discussed during the interviews. Face-to-face interviews were conducted with managers of three seaports in the south of Florida: Port of Miami, Port Everglades and Port of Palm Beach. These ports have been chosen geographically, i.e. all three are situated very close to each other (less than 100km in between) in south Florida; and all handle containers, more than 100.000TEU a year.

In order to insure validity, the triangulation with multiple means of data collection has been used (Stuart et al. 2002). Apart from having face-to-face interviews and site visits at seaports' terminals, secondary data were drawn from internal company reports, newspaper articles, presentations,

reports, and websites. Some additional e-mail correspondence was also conducted in order to clarify and fill the gaps in data as well as to validate the findings from the interviews.

### **Seaport inland access and inland ports**

The ownership and management of ports shift from dominance of publicly owned and operated ports to a “landlord” port model in which port authorities cede control of the business of port operations to private firms (Roso et al. 2015). The separation of port authority and service provision increases port efficiency and enhances service qualities as competition among multiple service providers within a port is introduced (Van Reeve 2010). Seaports as important nodes in the transport chain have replaced their earlier narrow focus on cargo handling with a wide range of logistic activities, giving them a more active role. There has been a trend in organizational and technological changes towards offering door-to-door transport solutions rather than port-to-port (Paixão and Marlow 2003). This trend has enlarged the seaports’ hinterland and therefore created a competition among neighboring seaports. That competition requires from the seaports to focus not only on improvements within the seaport area but also on their inland access via functional inland intermodal terminals. The emergence of inland intermodal terminals connected to seaports took place in several regions around the world and yet there is no definitive consensus on how such facilities should be labeled, with terms such as dry port being advocated (Rodrigue et al, 2010). A dry port is an inland intermodal terminal directly connected to seaport(s) by rail, where customers can leave/pick up their standardized units, as if directly at/from the seaport (Roso et al, 2009). A dry port also offers transshipment services, as any conventional inland intermodal terminal does, and the value-added services such as storage, consolidation, depot, track and trace, maintenance of containers, and customs clearance that are usually available at seaports (Roso et al, 2009) and as such emphasizes higher level of integration with seaports, i.e. movement of seaport’s interface inland. In this paper term inland port for the facility having dry port characteristics will be used, as the one is more common and therefore more appropriate in North America. Inland ports are planned, set and operated by wide variety of actors ranging from public to private interest (Rodrigue et al, 2010). Inland ports that have a higher level of integration with the seaport have a higher chance of success, simply because of integration or lack of competition between them (Roso, 2013).

According to Roso (2013) implementation of an inland port brings a competitive advantage to the seaport since it expands the seaport’s hinterland, i.e., it improves the seaport’s access to areas outside its traditional hinterland by offering shippers low-cost and/or high-quality services, such as e.g. New Zealand’s case of Tauranga’s inland port. The implementation of the dry port is not the only factor in relieving seaport congestion (Henttu and Hilmola, 2011) or improving seaport inland access (Hanaoka and Regmi, 2011); however, it is a significant component in improving seaport productivity. With dry port implementation CO<sub>2</sub> emissions should decrease (Henttu and Hilmola, 2011; Roso, 2013), congestion at seaport terminals and seaport city roads should be avoided, and the risk of road accidents reduced (Roso et al, 2009). Besides these general benefits to the environment due to shift from road to rail, inland ports mostly offer seaports a possibility to increase the throughput without physical expansion at the site (Roso et al, 2009). Furthermore, market-driven Outside-In development of inland intermodal terminals (dry ports) that generates higher level of integration with the seaports has been seen as very successful and very likely contributing to viability of rail on short distances Roso (2013).

### **South Florida Ports**

The State of Florida, a peninsula located in the south-eastern corner of the US and only 90 miles from the island of Cuba, covers a total area of 58,560 square miles and has an estimated population of 19 million (Florida Chamber Foundation, 2013). Its twelve international airports are a major gateway for visitors and air cargo from the Caribbean and Latin America. Forty percent of all US exports to Latin and South America pass through the State. A total of \$132 billion in two-way trade to 225 trading partners took place at Florida ports in 2013. With 60,000 exporting businesses, Florida businesses account for one in five US exporters (ibid). Despite the number of small exporters, a large consumer

market, and a tourism industry that attracted 87 million visitors in 2011, the State has a relatively small manufacturing sector and has been a net importer of freight (Florida Chamber Foundation, 2013; State of Florida, 2016).

While the State of Florida currently has 14 deep-water ports, most are not natural. An extensive continental shelf and a system of barrier islands and reefs, particularly in the southern part of the state, limited access. A hurricane in 1835 opened up a small natural waterway in the barrier islands around Biscayne Bay allowing access to Miami. Although a channel into Miami was built in 1912, the port itself was not established until 1960. Port Everglades was opened three decades earlier (1927) after the removal of a rocky barrier and blasting to create a suitable basin for the harbour and is currently the deepest United States port south of Norfolk, Virginia. It became the State's first Foreign-Trade Zone in the 1970s. The Port of Palm Beach was established in 1935 but saw only limited cruise ship activity until the 1950s when efforts were made to establish freight service to Cuba (Kaye, 2015, Port Everglades, 2016)

Recognizing the potential impact of the expansion of the Panama Canal, a shift in US growth to the Southeast, and the potential opening of trade with Cuba, the State of Florida began to invest in strategic transportation projects to position the state as a global hub for trade and investment. The State of Florida ranked number one in container traffic among nine southern states in 1990, however, two decades of growth in the states of Georgia, Texas, Virginia, and the Carolinas has outpaced Florida with the State of Georgia alone increasing its market share by 11.4% over this period. To answer these challenges, the FDOT (2010a) with the Florida Seaport System Plan called for the development of at least one seaport with 50 feet of water and on-dock rail, expanded capacity at seaports to serve containers, break-bulk, and bulk markets, improved landside connectivity including the development of high-capacity long-distance rail and truck corridors, and expanded distribution centre capacity. Ten Florida ports handle container traffic with the top four ports being Miami, Everglades, Jacksonville, and Palm Beach. Of these ports, Miami, Everglades, and Jacksonville are considered to be major cargo gateway ports.

The Florida rail system is comprised of 2,786 miles of mainline track that is owned by 15 operating line-haul railroads. These include two Class 1 railroads (CSX Transportation and Norfolk Southern Corporation) and one Class II railroad (Florida East Coast Railway (FECR)). CSX and Norfolk serve the Eastern US and connect Florida to the national rail network. CSX is the largest operating railroad in the Florida with an extensive rail network in the Panhandle, and Northern and Central Florida. Norfolk does not have an extensive network in Florida, but they do have a haulage agreement with FECR between Miami and Jacksonville. FECR owns 386 miles of track along the Eastern coast of Florida, making it the second largest network in Florida. FECR provides exclusive rail service to the Ports of Palm Beach, Everglades, and Miami (FDOT, 2010b).

The State of Florida has identified eight locations for inland ports. These are Americas Gateway Logistics Center, Central Florida Intermodal Logistics Center, Southwest Florida Intermodal Logistics Center, South Florida Intermodal Logistics Center (Belle Glade), South Florida Logistics Center (Coral Gables), North Florida Intermodal Park, Crawford Diamond Industrial Center, and the US Sugar and Hilliard Bros Airglades Airport (Garcia, 2014). In South Florida, the key inland ports open and/or in development are South Florida Logistics Center, Americas Gateway, US Sugar, and Airglades. Flagler Global Logistics (South Florida Logistics Center) was founded in 1892 by Henry Flagler and located just south of the Port of Miami in the City of Coral Gables. It provides warehousing, consolidation/deconsolidation, refrigerated cargo, and Foreign Trade Zone services as well as links to FEC and other transportation (Flagler Global Logistics, 2016). Four developing inland ports – Airglades, Americas Gateway, South Florida Intermodal Logistics Center, and US Sugar – are located on the Southern shore of Lake Okeechobee. These facilities are roughly 109 miles north of Miami Beach and 70 miles due west from Palm Beach.

## **Port Miami**

Port Miami stands as US container port closest to the Panama Canal and in year 2015 handled 1,007,782 TEU mostly from Latin America and the Caribbean (Port Miami, 2016). The landlord port on 520 acres leases agreements with cargo terminal operators: Seaboard Marine, POMTOC and SFCT (ibid). The port handles wide range of cargo such as waste, machinery and textiles, which are top 3 export commodities; and apparel, furniture and fruit/vegetables, which are top 3 import commodities. Imports and exports are very balanced, 51 and 49% respectively.

The Port is a point of entry/departure for cargo and relies on its connections with other intermodal facilities such as the Miami International Airport (MIA), the FEC Hialeah Intermodal Facility, and the West Dade trade-related, freight forwarding and consolidation warehouses (Port Miami, 2016). At the port, landside access has been improved through the Port of Miami Tunnel that feeds truck traffic directly into the major interstate highway; and the Intermodal and Rail Service reconnection project - the port has on-dock rail (9,000 ft. of tracks on 3 sidings) which links the container terminals to national rail system that connects the port to 70% of the U.S. population in four days or less (Port Miami, 2016). However, only 10-12% of the total container volumes are transported by rail to/from the port. Additional dredging has deepened the port to 50 feet to prepare for Panama Canal opening and arrival of 14,000 TEU vessels. The U.S. Department of Commerce has granted Miami-Dade County the authority to establish Foreign Trade Zone No.281 that should expedite and encourage foreign trade commerce (Port Miami, 2016).

## **Port Everglades**

The port currently leases 85% of its 500 acres of land area to various private entities for cargo and cruise services. Largest of the three ports; with almost 24 million tons of cargo: bulk, break bulk, petroleum and containerized, moved through Port Everglades in 2014 when the port also broke the one million TEU mark ranking it as the 11th leading container port in the United States and the top port in Florida, serving more than 150 ports and 70 countries (Port Everglades, 2015). The port handled 1,060,507 TEUs in year 2015 and kept its first container port in Florida position (ibid). The port is conveniently located just across from the international airport that brings additional cargo and cruise passengers but also limits the stacking of container for safety reasons. Dredging at Port Everglades has upgraded the channel, turning basin, and berthing while near-dock intermodal container transfer and highway and rail access has improved connectivity. The port has 12 container terminal operators handling fruit, vegetables, automobiles and apparel mostly to and from Central America, the Caribbean, South America, Europe and even the Far East. Export and imports are rather balanced, roughly 40 and 60 percent respectively.

FECR has completed 42.5-acre near-dock intermodal container transfer facility that transfers international and domestic containers between ship and rail (Port Everglades, 2015), which currently are approx. 10-15% of the total container volumes handled. The ICTF should reduce congestion on interstate highways and local roadways and reduce air emissions by diverting an estimated 180,000 trucks from the roads by the year 2027 (ibid). Furthermore the port is in the process of adding five new cargo berths and five new Super-Post Panamax cranes, along with dredging its main channel from 42 to 50 feet by 2017 (Port Everglades, 2015).

## **Port of Palm Beach**

The landlord port provides cargo and cruise service to 30 tenants on its 162 acres of land; Tropical Shipping is a major container operator at the port and major carrier in the Caribbean (Port of Palm Beach, 2015). The 25<sup>th</sup> busiest container port in US is unique with its 650 000 tones a year of raw sugar moved by short-sea shipping to Baltimore, Maryland and NY (Ports&Harbour, 2014). In 2015 the port handled 271,277 TEUs; predominantly export about 80% and primarily destined to Caribbean (Port of Palm Beach, 2015). Cargo movement is facilitated through easy access to Interstate 95 and five miles long port-owned on-dock rail that connects directly to the FECR moving approx. 30,000 TEU by rail to and from the port. The port considers its non-union labor force as an advantage over

neighboring ports. The Port is an efficient container port, but constrained by channel and berth issues as well as limited land availability (Florida Department of Transportation, 2010). The Port's Master Plan calls for additional dredging, cooperation with the FECR and CSX, development of Intermodal Logistics Centers and improved highway links (CH2M Hill & Martin Associates, 2013). The Port, although small compared to the neighbors, recognized the need for expansion and proposed developing a local inland port in the past. The idea was well received and the Port, along with the Florida Department of Transportation worked on study to determine the optimal location but the project failed.

### **The battle for the sea is won inland, is it indeed?**

Functional inland access to seaports is an important decision making factor in the development strategies of seaports; as well as a significant factor that affects shipping companies' port choice. A seaport's natural or immediate hinterland is no longer defined only by geographical distance but by competition with other seaports, i.e. by the quality of the service at the seaport terminals as well as at their inland facilities (Roso, 2013), in other words, for many seaports the battle for the sea is won inland. All three South Florida ports are conveniently located with easy access to Florida's interstate and highway systems and therefore manage container truck deliveries/pick ups without big delays or massive congestion problems. In particular Miami solved, at least temporarily, congestion problems with the road tunnel. And, all three have on or near-dock rail access that is used to move containers to/from the seaports but insufficiently, the potential is much bigger and needs to be released.

In 2015 Port Everglades topped its record in container trade; Port Miami hit new highs in cargo, while business at Port of Palm Beach was mainly flat. Port Everglades, for example, handled 5% more containers in fiscal 2015 than a year earlier mostly due to a new near-dock intermodal container transfer facility that encourages delivery of cargo that can be quickly and economically sent by rail to inland destinations north. To compare, Charleston Port recorded 14% growth and handled 1.9 million TEU in 2015 (SCP, 2016) mostly due to its inland port. The South Carolina Inland Port (SCIP) at Greer opened in 2013 is aimed at extending the Port of Charleston's hinterland; SCIP is situated 212 miles from the port and is linked to the port by the Norfolk Southern main rail line that provides overnight double-stack container train service between Charleston and the Upstate (WCN; 2013). The initial capacity of the facility was around 40,000 containers/year but the port already realized that the facility could handle as many as 100,000 containers/year within few years (ibid). The success of this inland port encouraged the port to build a second such intermodal facility, at Dillon, but also demand for enhanced efficiency of international container movements between the Port of Charleston and growing markets in South and North Carolina (WCN, 2016b). Further comparison to Port of Savannah, the busiest container export port on East coast that has access to The Cordele Inland Port (Georgia Port Authority, 2016). The inland port also called The Inland Gateway offers a direct 200-mile rail route to the Port of Savannah container terminal Garden City Terminal with the goal to create and expand international markets (ibid). All three South Florida ports, particularly Miami, are relatively new and because of their location they have historically been ports of entry for Latin America and due to the location have taken these volumes for granted. While they were leading ports in 1990 (and have continued to post growth as container traffic has exploded), the ports north of them in Georgia, Virginia, and the Carolinas who have been strategic in their development of ports and inland ports have grown faster and overtaken them.

At least 15 port services can be carried out at inland ports and freed the space at ports and to add value to the business equation for shippers; such as e.g. storage, customs clearance, container cleaning, container repairs, inspection, quarantine, stripping and stuffing, empty container depots (Roso et al, 2015). Both Port Miami and Port Everglades state that ports can not fund inland ports without increase in container volumes; i.e. crucial is to have a single cargo mass or client to make such enterprise commercially viable. Furthermore, Port Miami asserts that federal funding support is important for such development. Nevertheless successful examples of inland ports implementation are evident already in South Carolina for Charleston port without Federal funding; South Carolina Port

Authority funded the project (SCA, 2016). Furthermore, around 23% of the total container volumes were transported by rail to/from the Charleston in 2015, which is almost as double as Miami and Everglades combined; intermodal volume has increases for 166% since 2011 showing a strong need for additional inland port facilities (WCN, 2016b). Increase in intermodal volumes and demand for shift from road to rail has been seen generally and the latest request from The National Industrial Transportation League that has reiterated its demand for open access on US railroads shows (WCN, 2016c), among others, the need for more goods on the rail.

Neighbouring ports are usually thought of as rivals but often there is a scope for cooperation too such as in a way that South Florida ports all strive to bring volumes and trade to Florida. However, Port Everglades operator King Ocean consolidated several Eastern Caribbean services that were previously calling at Miami, indicating some sort of competition; these services are anticipated to generate approximately 30,000 TEU/year additionally (Port Everglades, 2015). Port Miami weaknesses are the egress/ingress to the port, reputation for poor service, and the adversity for people to drive into the port (PPB ref). Nevertheless, Port Miami claims to be "Big ship ready!" since they've acquired 6 Post-Panamax cranes and deep dredged to -50 feet (Trade Numbers, 2015). Those features are crucial for Post-Panamax vessels to call at the seaport but not enough; improvements only in the maritime part of the transport sector are not enough for the entire transport chain to function properly (Roso et.al. 2015). Big ships, big problems! Introduction of big ships is good business for the shipping line with reduction of unit costs, but overall supply chain cost are increasing (WCN, 2016a). Lloyd's List reported that despite being theoretically able to handle ships of up to 14,000 TEU, the expanded canal is adopting a slowly-slowly approach to taking larger vessels, after changes in the US energy market are currently limiting demand and because ports on the US east coast are not yet ready to take anything much larger than 8,500 TEU (Lloyds loading list, 2016).

### **Conclusion**

Competition usually requires ports to focus on their inland access and many ports tend to expand their hinterland through close links with inland intermodal terminals based on a higher level of functional integration. However between container ports in south Florida there was no hard competition so far, i.e. they all seemed to work on bringing the volumes to Florida from different markets in hinterland and foreland; all three are heavily involved in cruise business, and they had no particular capacity issues at their terminals or heavy congestion at the port gates.

The Panama Canal has linked the Pacific with the Atlantic for more than 100 years and soon it will be possible for significantly larger ships to pass through the canal and it is likely to mean one of the biggest changes for the global shipping industry. It is expected to bring an increase in cargo at ports of Florida's east and Gulf coasts; the cargo from new bigger ships that can carry two to three times the container than the ships passing the canal before the expansion. Will the south Florida ports be able to manage those vessels? The challenge facing these ports is to increase their capacity and improve their inland access to meet the demand and to take advantage of increased volumes to compete with other ports. Port Miami has deep dredged to -50 feet and acquired Post-Panamax cranes and Port of Everglades is in the process of dredging its main channel to 50 feet and acquiring Post-Panamax cranes. According to Lloyds loading list (2016) ports on the Florida east coast are not yet ready to take anything much larger than 8,500 TEU. Maybe because capacity increase only at seaport facilities, such as deep channel drafts and appropriate port equipment, without improvements in seaports' inland access are not enough for the entire container transport chain to function properly?

### **References**

- Andersson, D. and V. Roso (2016) Developing Dry Ports Through the Use of Value-Added Services, *Commercial Transport 2016*, pp 191-201, Springer International Publishing.
- Bask, A; Roso, V, Hämäläinen, E and Andersson, D (2014) Development of Seaport – Dry Port Dyads: Two cases from Northern Europe, *Journal of Transport Geography*, 39, pp 85-95.
- Beresford, A., Pettit, S., Xu, Q., and Williams, S. (2012) A study of dry port development in China. *Maritime Economics and Logistics* 14(1), 73–98.

- CH2M Hill & Martin Associates (2013) Port of Palm Beach Master Plan Update 2012-2022, Port of Palm Beach, Palm Beach, Florida.
- de Langen, P.W. and Chouly, A. (2004), Hinterland Access Regimes in Seaports, *European Journal of Transport and Infrastructure Research*, Vol. 4, no. 4, pp. 361-380.
- Flagler Global Logistics (2016) About Us, accessed May 2, 2016 at <http://www.sflcmia.com/>.
- Flämig, H. and Hesse M. (2011) Placing dry ports. Port regionalization as a planning challenge—The case of Hamburg, Germany and the Süderelbe, *Research in Transportation Economics* 33(1), 35–41.
- Florida Chamber Foundation (2013) Florida: Made for Trade-Florida Trade and Logistics Study 2.0), Florida Chamber Foundation and Florida Department of Transportation,
- Florida Department of Transportation (2010a) Florida Seaport System Plan, FDOT, Tallahassee, Florida.
- Florida Department of Transportation (2010b) Current Freight Rail System and Services in Florida in Investment Elements of the 2010 Florida Rail System Plan, FDOT, Tallahassee, Florida.
- Garcia, J. (2014) Florida's inland ports of call, *Florida Trend*, accessed may 2, 2016 at <http://www.floridatrend.com/article/17844/floridas-inland-ports-of-call>
- Georgia Port Authority (2016) Website: <http://www.gaports.com/Home.aspx>
- Hanaoka, S. and Regmi, M. B. (2011) Promoting intermodal freight transport through the development of dry ports in Asia: An environmental perspective. *IATSS Research* 35, 16–23.
- Heaver, T.; Meersman, H. and Van De Voorde, E. (2001), Co-operation and competition in international container transport: strategies for ports, *Maritime Policy and Management*, 28:293-306.
- Henttu, V. and Hilmola, O.-P. (2011) Financial and environmental impacts of hypothetical Finnish dry port structure, *Research in Transportation Economics* 33(1), 35–41.
- Kaye, K. (2015), Sailing back in history: A look at South Florida's ports, *SunSentinel*. Available online at <http://www.sun-sentinel.com/local/broward/fl-south-florida-cruise-history-20150821-story.html>.
- Korovyakovsky, E. and Panova, Y. (2011) Dynamics of Russian dry ports. *Research in Transportation Economics* 33(1), 25–34.
- Lloyds loading list (2016) New era for global trade as expanded Panama Canal opens. Website: <http://www.lloydsloadinglist.com>
- Monios, J. (2011) The role of inland terminal development in the hinterland access strategies of Spanish ports, *Research in Transportation Economics* 33(1), 59–66.
- Ng, A. K. Y. and Gujar, G. C. (2009) Government policies, efficiency and competitiveness: The case of dry ports in India, *Transport Policy* 16, 232–239.
- Paixão, A. C. and Marlow, P. B. (2003) Fourth generation ports—a question of agility?, *International Journal of Physical Distribution & Logistics Management* 3(4), 355–376.
- Parola, F. and Sciomachen A. (2005), Intermodal container flows in a port system network: Analysis of possible growths via simulation models, *International Journal of Production Economics*, Vol. 97, Issue 1, 75-88.
- Port Everglades (2015) Powerful Milestones Set New Records – Fiscal Year 2014 Commerce Report
- Port Everglades (2016) History, Available at <http://www.porteverglades.net/about-us/history/>
- Port Miami (2016) Website: <http://www.miamidade.gov/portmiami/deep-dredge.asp>
- Port of Palm Beach (2015) Connecting Communities through cargo & cruise, Leaflet, Port of Palm Beach District.
- Ports&Harbour (2014) Official Journal of the International Association of Ports and Harbours, November/December 2014 Vol 59 No 6
- Rodrigue, J.-P., J. Debie, A. Fremont and E. Gouvernal (2010) Functions and actors of inland ports: European and North American dynamics, *Journal of Transport Geography*. 18(4), 519-529.

- Roso, V (2013) Sustainable intermodal transport via dry ports - importance of directional development, *World Review of Intermodal Transportation Research*, Vol.4, No 2/3, pp. 140-156.
- Roso, V., Woxenius, J., and Lumsden, K. (2009) The dry port concept: Connecting container seaports with the hinterland. *Journal of Transport Geography* 17(5), 338–345.
- Roso, V, Russell, D, Ruamsook, K and Stefansson G (2015) Inland port services for seaports' competitive advantage. *World Review of Intermodal Transportation Research* Vol. 5 (2015), 3, p. 263-280.
- South Carolina Ports (2016) Website [scpa.com/cargo](http://scpa.com/cargo)
- State of Florida (2016) Florida Quick Facts, accessed May 2, 2016 at <http://www.stateofflorida.com/facts.aspx#27101>
- Stuart, I., McCutcheon, D., Handfield, R., McLachlin, R. and Samson, D. (2002), "Effective case research in operations management: a process perspective", *Journal of Operations Management*, Vol. 20 No. 5, pp. 419-33.
- Trade Numbers (2015) Miami – Miami's \$115.93 billion in trade with the world, World City.
- Van Reeve, Peran (2010) "The Effect of Competition on Economic Rents in Seaports." *Journal of Transport Economics and Policy* 44 (1): 79–92.
- World Cargo News (WRC) (2013) Start made on Greer inland port, March 2013.
- World Cargo News (WRC) (2016a) Big Ships, big problems, May 2016.
- World Cargo News (WRC) (2016b) Charleston to have second inland port, April 2016.
- World Cargo News (WRC) (2016c) US shippers on the rails, June 2016.