

TRENDS AND DYNAMICS OF THE U.S. MARINE TRANSPORTATION SYSTEM AND KEY ISSUES FACING THE U.S. PORT INDUSTRY

*American Association of Port Authorities
Marine Terminal Management Training Program*

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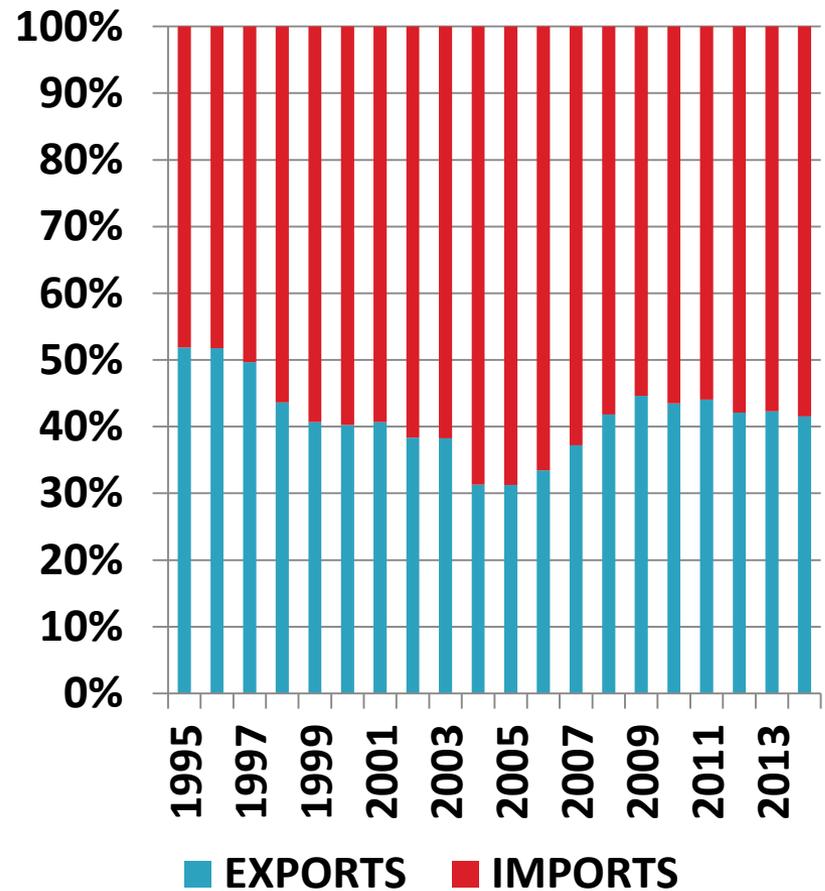
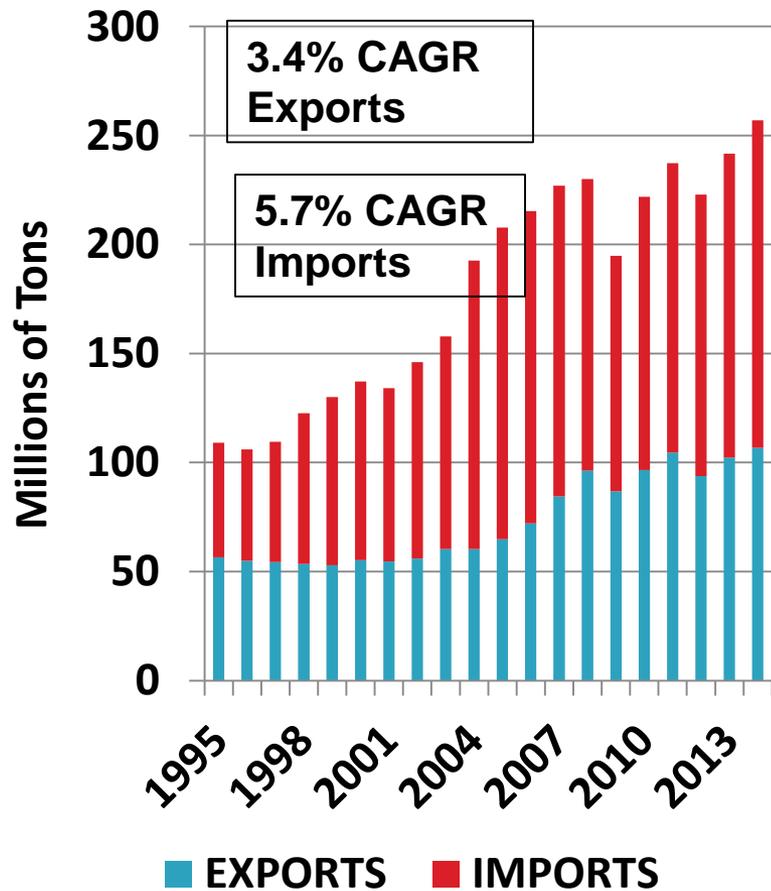
September 14, 2015

Agenda

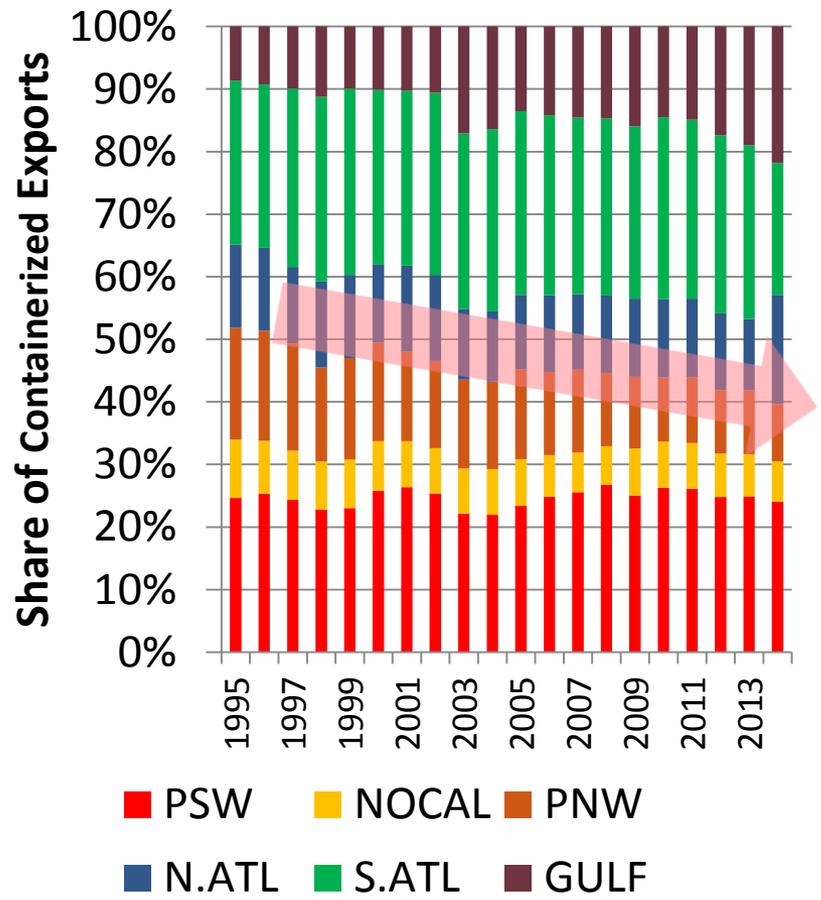
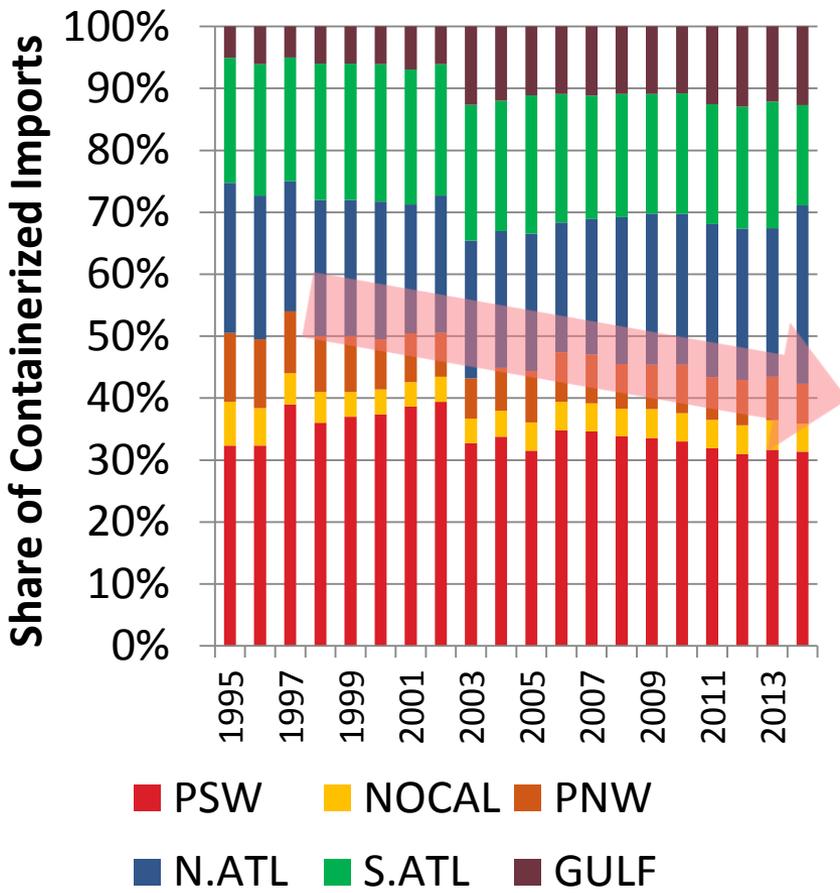
- **Cargo trends - Panama Canal vs. Suez Canal**
- **Infrastructure needs**
- **Challenges of successful infrastructure projects – Federal funding crisis**
- **The need for private sector investment**

PANAMA VS. THE SUEZ

2014 Was a record year for containerized tonnage – Imported containerized cargo dominates, but exports have been increasing since 2005



West Coast ports handle about 42% of containerized imports – However, share has been declining since 2001; About 40% of containerized exports move via West Coast ports



Shocks have occurred in the existing logistics patterns of importers/BCOs and these changes primarily occurred between 2002 and 2007

- **Consolidation of imports via San Pedro Bay (Los Angeles and Long Beach) Ports - mid 1990's:**
 - Distribution Center (DC) growth
 - Cross-dock operations
 - Rail investments in LA/LB to Midwest routings
- **But then...**
 - 9/11
 - West Coast Shutdown (2002)
 - Capacity issues – land and labor shortages
 - Rail and truck shortages
 - High intermodal rates
- **And more recently...**
 - Shifting production centers
 - Economic crisis
 - Continued West Coast labor issues
- ***Leads to growth in all-water services...***

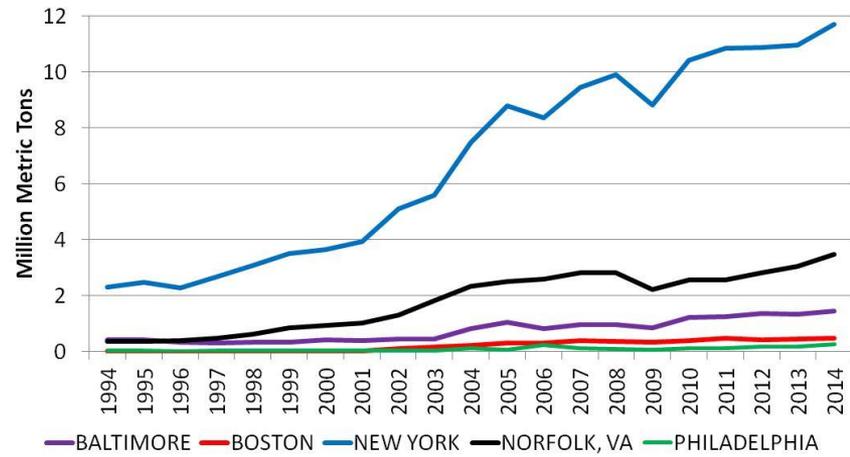
All-water services are growing...

- **Significant growth in distribution centers in Gulf and Atlantic port ranges**
- **Proximity to Southern Asia/India is a positive for Suez Canal routings**
- **With direct services to East and Gulf Coast, transit time differentials are narrowing**
- **Port infrastructure investment on East and Gulf Coasts has responded:**
 - ❑ Terminal development
 - ❑ Rail infrastructure

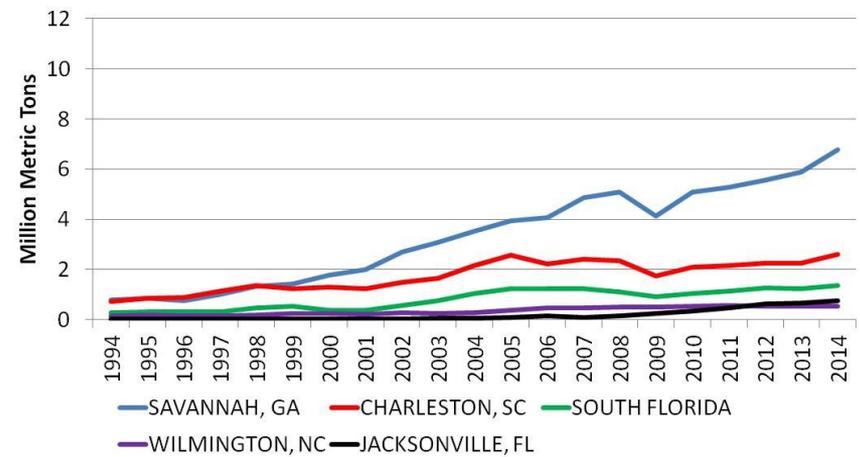


Growth in all-water services accelerated after 2002 - Asian imports via Atlantic and Gulf Coast ports

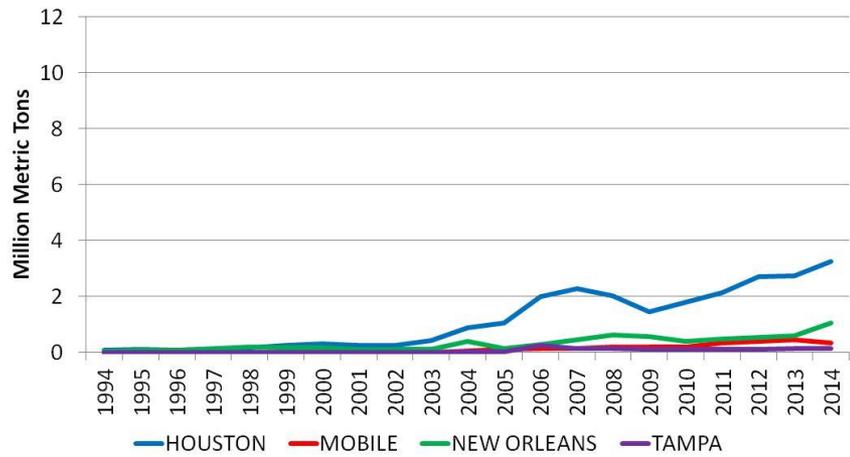
North Atlantic



South Atlantic



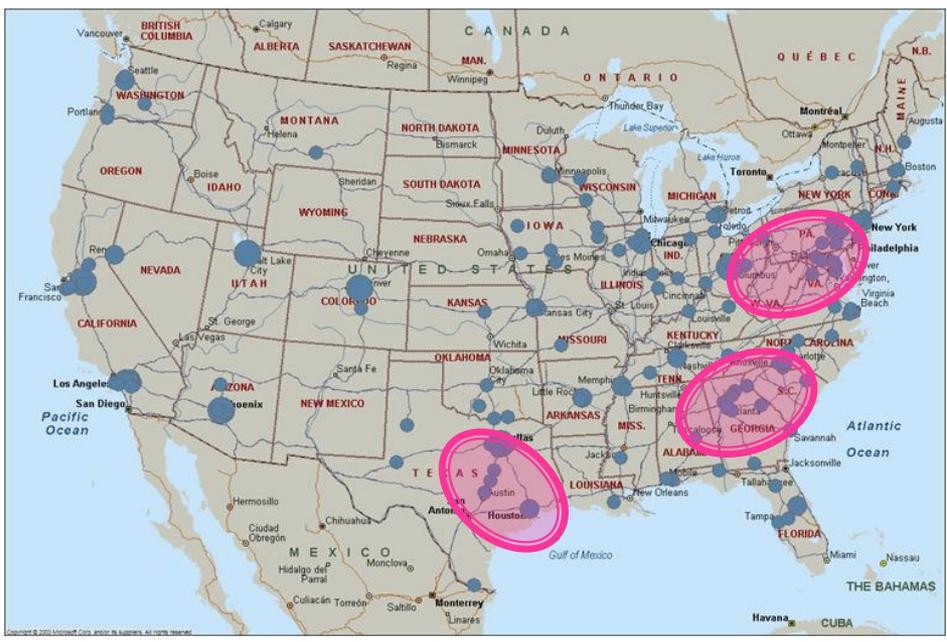
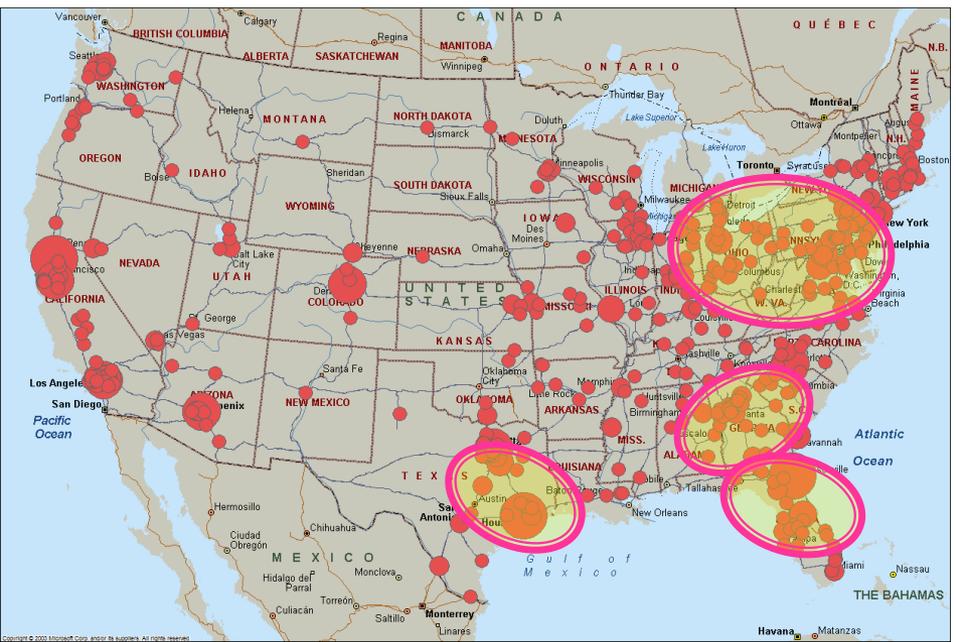
Gulf Coast



Significant growth in distribution centers in Gulf and Atlantic port ranges have driven growth in all-water services

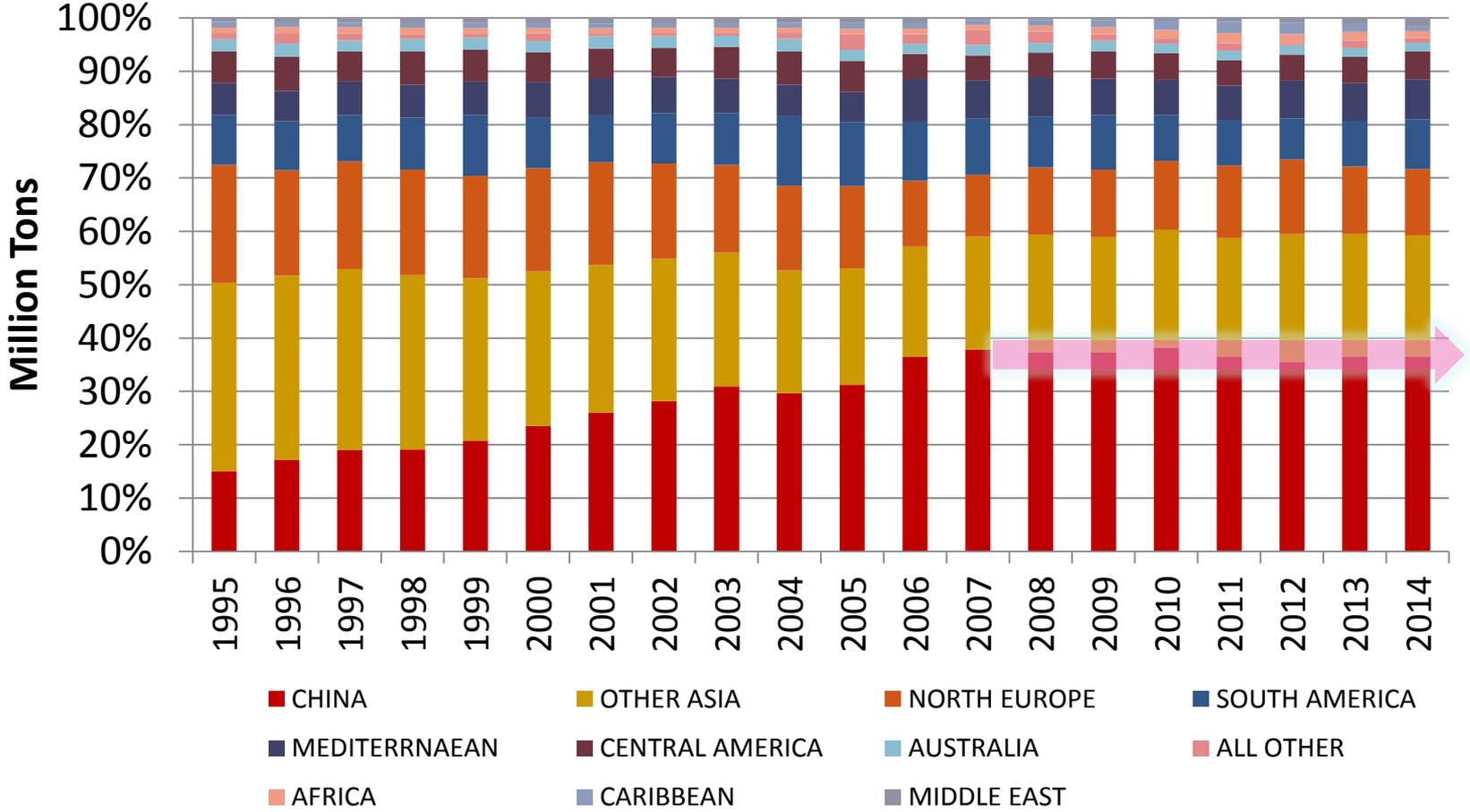
- Top 25 Retailers

- 26-50 Retailers

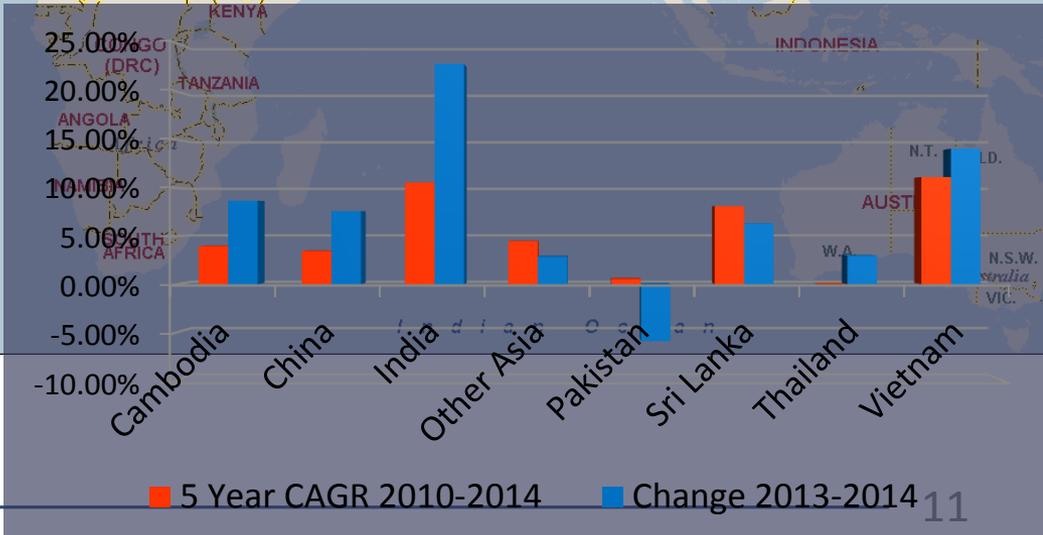
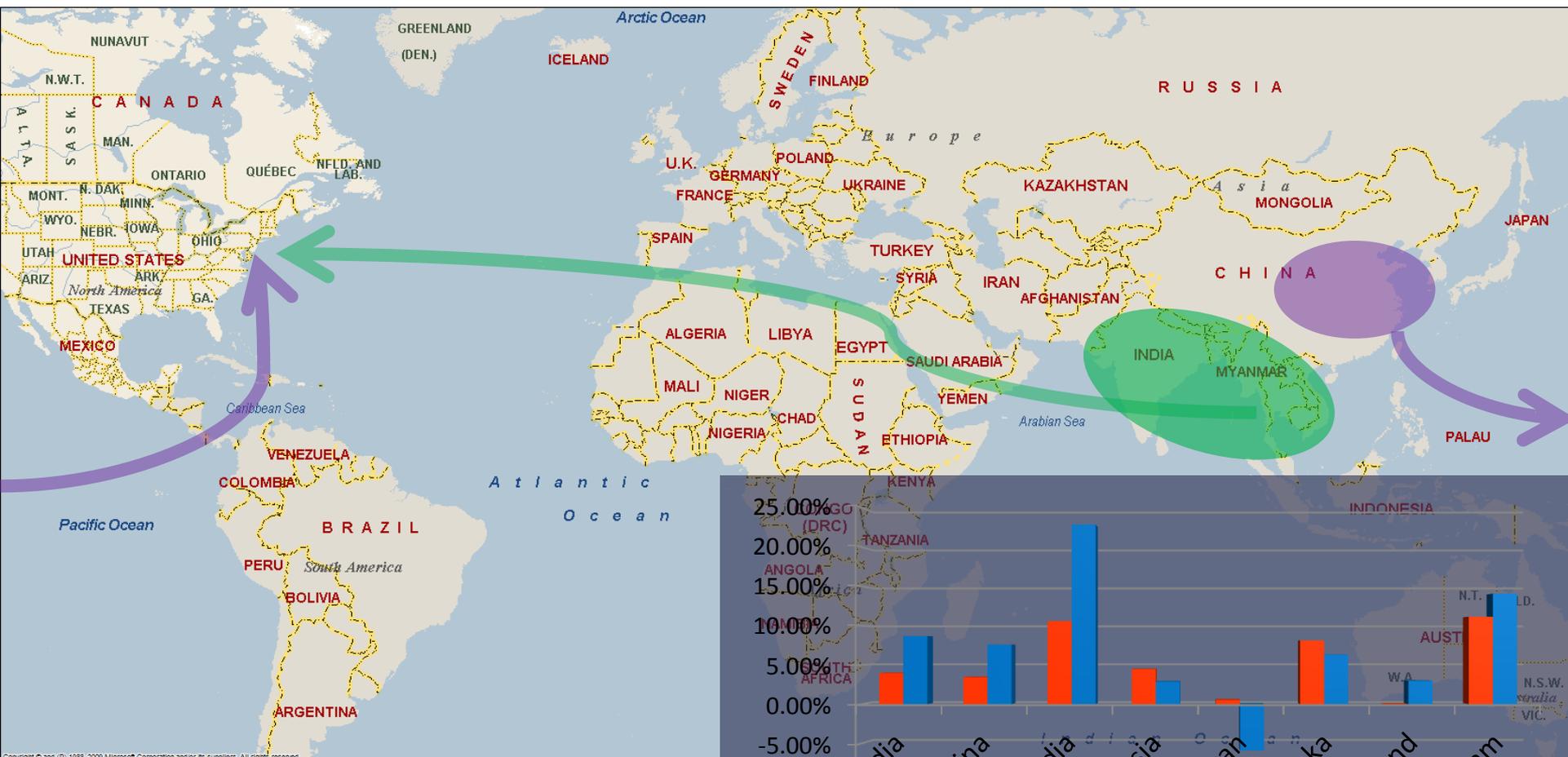


Source: Chain Store Guide, National Retail Federation

China has been responsible for a growing share of imported containerized tonnage, but share has stabilized

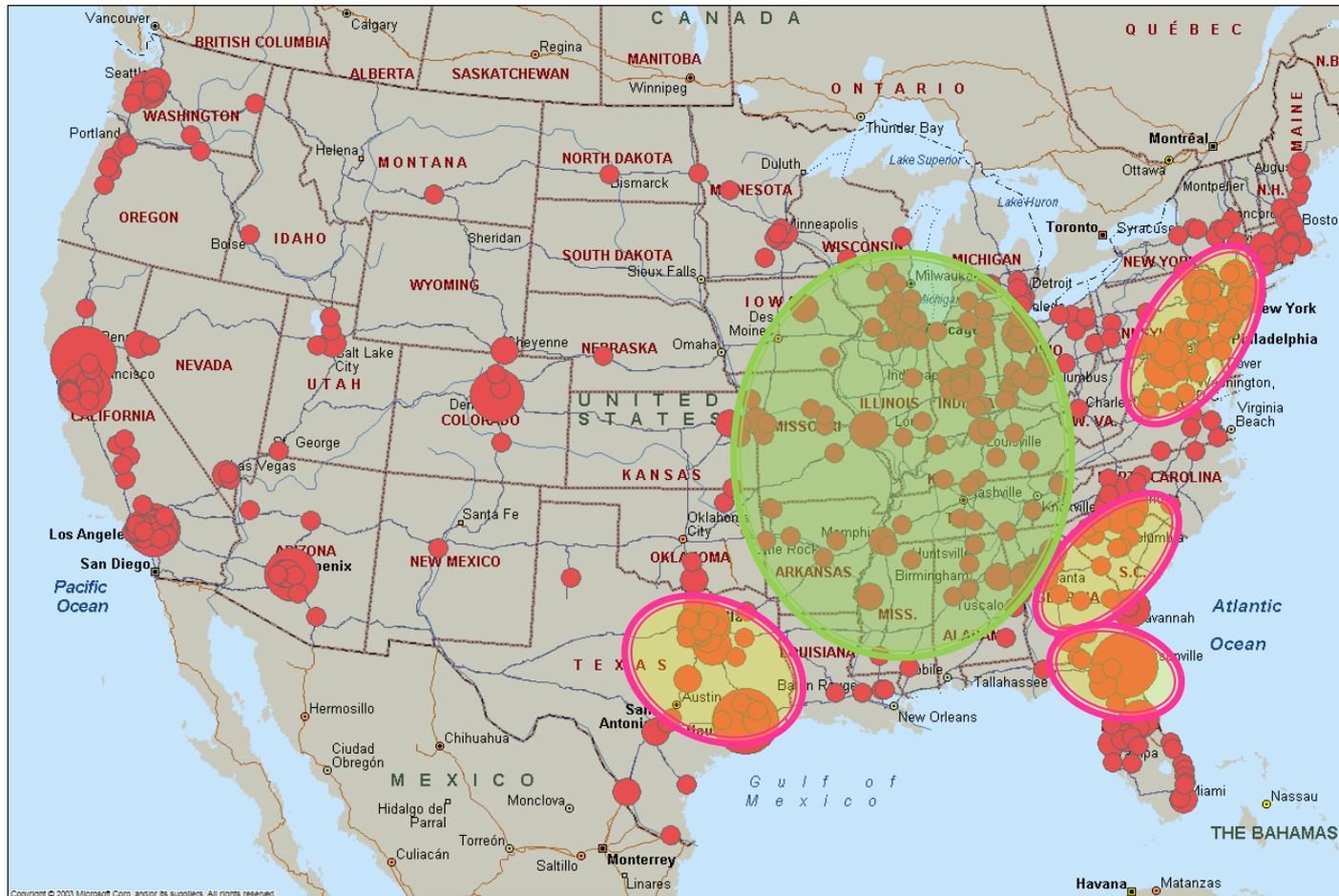


Asian supply sources are shifting and favor a Suez all-water routing to the East Coast



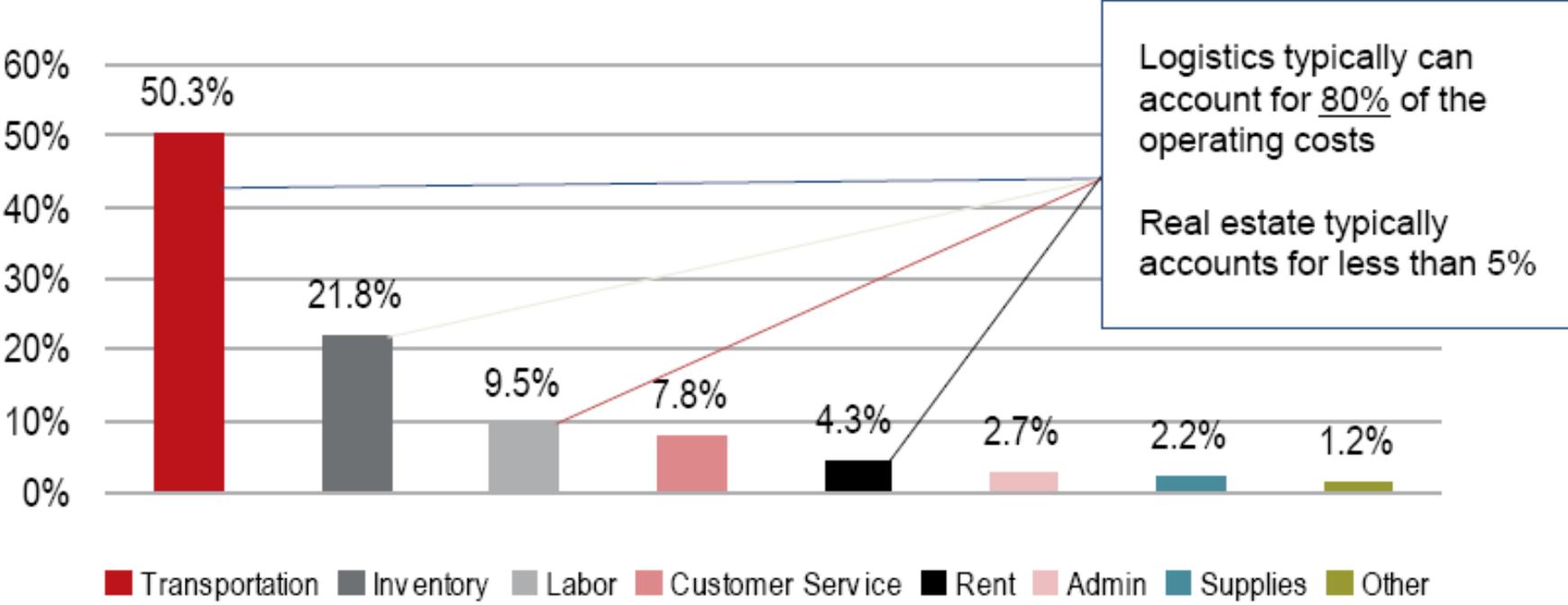
Source: U.S. Bureau of Census, USA Trade Online

Further implications: East and Gulf Coast ports will need to compete for local market as well as discretionary Midwest “battleground” – rail access is critical



Battleground highlighted in green

Logistics costs play an important role in total operating costs of a facility...



Source: Exchange Inc.: Logistics Cost & Service Report

Rail projects are underway to increase access to Midwestern markets

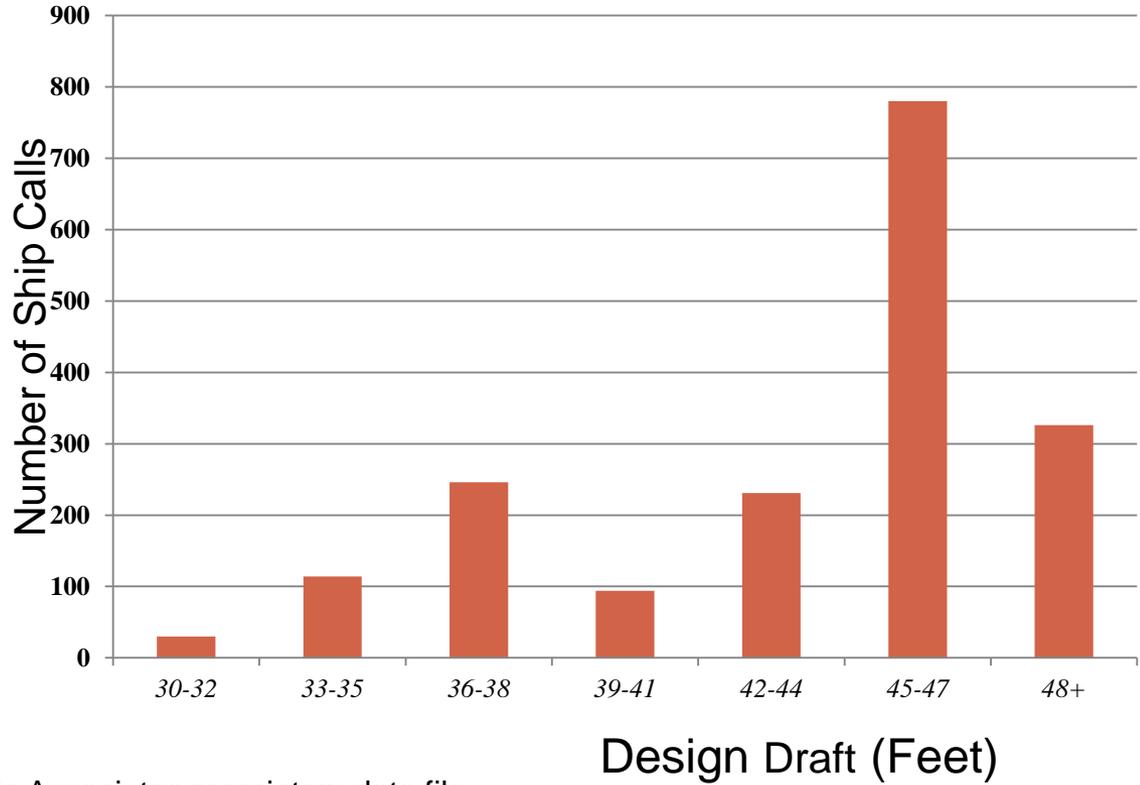
- **CSX investment in National Gateway project:**
 - ICTF in North Baltimore, Ohio is key
 - Ports of Baltimore and New York, both with 50 ft. of water, are key gateways to this system
- **Heartland Corridor Project, will provide reduced transit times into the Midwestern market via NS:**
 - Norfolk, with 50 ft., is the key gateway for this project
- **Savannah, Houston, Jacksonville and Miami (with 50 ft.), are also targeting traditional intermodal markets in the Southeastern U.S.**
- **Prince Rupert feeds directly into the Midwestern market**

Implications of Panama Canal expansion and growth in Suez traffic

- **After 2016, the composition of the fleet will likely change, as 6,500+ TEU vessels will be deployed through Canal**
- **Actual volume increases through the Panama Canal into the U.S. Atlantic and Gulf Coast may be less than anticipated**
- **East and Gulf Coasts will have to compete to handle the larger sized vessels that will be deployed:**
 - Channel Depth
 - Berth Capacity
 - Crane outreach capability
 - Terminal productivity to minimize time in port
 - *All require capital investment*
- **East and Gulf Coast ports will need to compete for:**
 - Local market
 - Access to discretionary cargo for both truck and rail
- **West Coast ports and railroads will respond:**
- **Uncertainty over Panama Canal Tolls**

Composition of current Trans-Pacific container fleet at West Coast ports will dictate new all-water vessel size

Distribution of Container Vessel Calls at West Coast Port, by Design Draft



Source: Martin Associates proprietary data file

43% of the container order book consists of vessels in excess of 8,000 TEUS – and growing

TEU Size Class	Current Fleet	Order Book
<999	1,099	32
1000 < 1999	1,286	87
2000 < 3999	1,046	89
4000 < 5999	921	110
6000 < 7999	250	42
8000 < 9999	280	106
>= 10,000	<u>111</u>	<u>165</u>
Total	4,993	631

Increased investment is necessary to compete with development of transshipment centers and logistics hubs in the Caribbean and Central America

- **Key transshipment center development capitalizing on water depth and East-West and North-South trade lanes:**
 - Panama
 - Bahamas
 - Jamaica
 - Dominican Republic
 - Costa Rica
 - Trinidad
 - Cuba
- **Natural progression is to logistics center development – Outsourcing of distribution center functions:**
 - Potential to develop competing Logistics/Distribution Centers to mainland locations:
 - Lower cost labor
 - Lower cost land costs
 - Packaging, labeling, pre-racking
 - 53 ft. domestics?
 - Support near market sourcing development in Central America

Growth in near-market sourcing in the Caribbean and Central America

- **Location decisions for off-shore production historically were driven by labor costs:**
 - China became the dominant player
 - Transportation and logistics costs were outweighed by labor costs
 - Growth in domestic demand has resulted in growth in labor costs
 - Logistics costs have become more critical in total costs and location decisions:
 - Fuel surcharges
 - Vessel capacity restrictions, service disruptions
- **Increasing development in Mexico, Central America and Caribbean:**
 - Increases market potential for smaller, non-load center ports with limited water
 - Likely growth in Gulf Coast ports and Mexican/Central American ports

Growth of near-market sourcing will continue to compete with Asian-sourced goods

- **Textiles and apparel industry, and manufacturing:**

- Increased labor costs in China
- Transportation costs becoming more critical (e.g. fuel):
 - Slow Steaming
 - Capacity Restrictions
 - Increase in logistics costs
- Faster time to market, quick changes/flexibility
- Lean supply chains – less inventory in chain
- Opportunities for ports with limited water depth and berth length

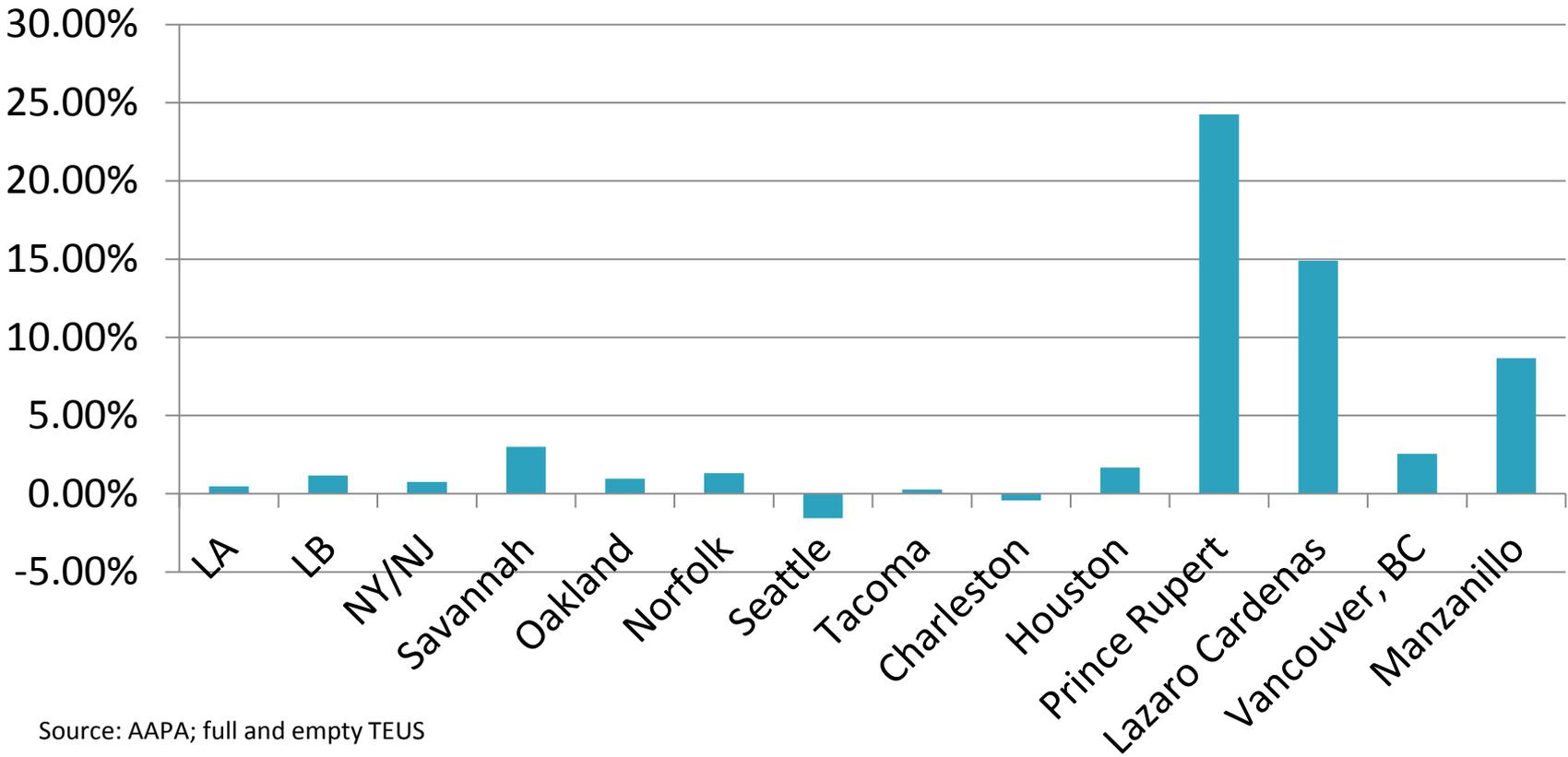
- **U.S. Trade Policy:**

- Free Trade Agreements (FTA):
 - Colombia and Panama
- Trans-Pacific Partnership (TPP):
 - 11 countries – Malaysia, Brunei, Vietnam, New Zealand, Chile, Mexico, Canada, Australia, Peru, Singapore and U.S.

**FEDERAL FUNDING CRISIS –
the Port Productivity Gap**

Comparison of CAGR 2008-2013 for top 10 U.S. container ports and key Canadian and Mexican ports

CAGR 2008-2013, TEUS



Source: AAPA; full and empty TEUS

Comparison of productivity at the world's leading container ports (Journal of Commerce)

Port	Country	Berth Productivity
Qingdao	China	96
Ningbo	China	88
Dalian	China	86
Shanghai	China	86
Tianjin	China	86
Yokohama	Japan	85
Jebel Ali	United Arab Emirates	81
Busan	South Korea	80
Nhava Sheva (Jawaharlal Nehru)	India	79
Yantian	China	78
Taipei	Taiwan	77
Xiamen	China	76
Long Beach	U.S.	74
Khor al Fakkan	United Arab Emirates	74
Elizabeth	U.S.	74
Nansha	China	73
Kaohsiung	Taiwan	72
Salalah	Oman	72
Mawan	China	71
Southampton	U.K.	71

Rankings based on average container moves per hour while ship is in port

Federal funding is required for deepening projects at Atlantic and Gulf Coast ports

State	Port Name	Current Depth	Planned Depth
Maryland	Baltimore	50	50
Massachusetts	Boston	40	48
South Carolina	Charleston (Authorized)	45	52
Texas	Corpus Christi (Authorized)	45	55
Delaware River	DE, PA, NJ Ports Portions Underway	40	45
Texas	Freeport (Authorized)	45	55
Texas	Houston-Galveston	45	45
Florida	Jacksonville (Authorized)	40	47
Florida	Manatee	40	40
Florida	Miami (Under Way)	42	50
Alabama	Mobile	45	45
Louisiana	New Orleans	45	45
New York	New York (Underway)	45-50	50
Virginia	Norfolk/Hampton Roads	50	55
Florida	Palm Beach	33	33
Florida	Port Everglades	42	47+
Florida	Port Canaveral	41	50+
Texas	Sabine Naches	40-42	42-48
Georgia	Savannah (Authorized)	42	47+
Florida	Tampa	43	43

After Miami is deepened, Port *MIAMI* will join New York, Baltimore and Norfolk as the only ports on the USEC/Gulf to have 50 feet of water

Ability to attract ***first-in-bound/last-out-bound*** vessel call

Infrastructure funding is the critical issue to economic growth

- **Ports have lost funding for system preservation projects, let alone major infrastructure projects:**
 - After 9/11 - security investments competing with system preservation investments
 - Downturn of trade reducing port revenues
 - Economic crisis reducing state/municipal public funding
 - USACE/Federal Government cannot fund the dredging/deepening projects and infrastructure projects
- **\$64 billion in the near-term is needed in US – (Mexican Government investing \$54 billion in next 6 years)**
- **Need for highly productive automated terminals to serve the largest container vessels**
- **Need for efficient rail and highway access**

More infrastructure funding in addition to deepwater ports is necessary

- **12,000 miles of inland waterways:**
 - 191 lock systems
 - 237 lock chambers
- **Replacement cost estimated at \$125 billion in 1994**
- **50% of the locks and dams over 60 years of age**
- **Efficient River Transportation System necessary for bulk exports**
- **Failure would be catastrophic in terms of:**
 - Economic cost
 - Loss of life

The National Export Initiative (NEI) cannot be accomplished without infrastructure investment

- *Doubling exports over five years (2014)*
- **Policy decision-making efforts:**
 - Improving trade advocacy and export promotion efforts
 - Increasing access to credit
 - Removing barriers to the sale of U.S. goods/services abroad
 - Pursuing policies at the global level to promote sustainable growth
- **Without adequately maintained shipping channels and port infrastructure, the U.S. participation and benefits will not be maximized:**
 - Heavy weight exports (agricultural products, forest products, chemicals)
 - Last port of call for exports – deep water critical

Possible solutions to Federal funding crisis

- **Fiscal 2016 budget reduces money for port infrastructure and navigation projects**
 - Planned for 100% of Harbor Maintenance Fund Money to be returned to ports by 2025
- **To date, there is a very limited understanding at the Federal level of:**
 - Importance of the U.S. port industry
 - Impact of the delays in navigational projects
 - Overall bureaucratic process and often “changing rules” of the USACE
 - To date, the port industry has not been unified in its message to the Federal government, focusing on individual/state issues

Possible solutions to Federal funding crisis

- **Undertake navigational solutions at local level:**
 - State investments
 - Private sector investment
- **Focus efforts at a national maritime system level, rather than the Port/State level**
- **Direct communications to “highest level” of Federal government, with a bi-partisan effort:**
 - Cabinet level focus
 - Transportation and Infrastructure Committee Focus
 - Get a voice/message in Federal government

**PORT-SPECIFIC INFRASTRUCTURE FUNDING –
Is Private Sector the Answer???**

Private Sector Investment

- **Private sector participation reached a peak in 2006-2007 period:**
 - Multiples on EBITDA were over 25
 - Expectations of a continued 6-10% annual growth
 - Anticipated returns 12-15%
- **Most funds are now looking at emerging markets where returns can be made:**
 - Caribbean
 - Africa
 - South America
 - Vietnam
- **High level of perceived risk in U.S. port investment:**
 - Labor
 - Navigational projects uncertainty
- **However, there is a current resurgent of interest in the U.S.**

Private Sector Investment

- **Conduit financing of projects where port provides access to municipal bonds:**
 - However, bonding capacity becomes issue
 - Lease specifications are critical
- **U.S. Ports need to refocus on participation by the terminal operators:**
 - Reduced lease payments but increased lease length in response to terminal operator investment in capital projects:
 - Baltimore (Ports America Chesapeake)
 - New York (GLOBAL)
 - Los Angeles (MOL)
 - Port Canaveral (Gulftainer)
 - Outright purchase of terminals – Kinder Morgan at Wilmington, DE
 - SSA Sacramento agreement
- **State's take on larger role in direct investment:**
 - Florida is key example

In closing, is a National Port Plan the answer???

- **Possible solution to port funding issues**
- **Could result in optimization of resources:**
 - Consolidation of ports in same geographical region
 - Winners and losers with respect to navigational and funding issues
- **Levels the playing field with other modes of transportation, even the private railroads with federal support on key regional/national projects/corridors**
- **Potentially result in greater investment in infrastructure to improve competitive position of U.S. economy**
- **Can it be removed from politics -- A Slippery Slope!!**

THANK YOU!