

The A in America's ACE





Moffatt & Nichol Background

- Established in 1945 in Long Beach, California, currently:
 - Offices in the Americas, Europe, Middle East and Pacific Rim
 - Practices: Goods Movement, Energy, Ports, Coastal, Urban Waterfronts & Marinas, Inspection & Rehabilitation
- Planning and design of marine and freight transportation
 - Terminal design for all types of freight and passenger movement
 - Freight planning and market analysis
 - Investment/privatization analysis
 - Strategic development plans
 - Port selection/network analysis
 - Coastal engineering
 - Port and waterside construction (marinas)
 - Railroads and capacity expansion
 - Environment issues/emission modeling
 - Port security

Commentary and presentation materials on this occasion are based on the personal views of the speaker and may not coincide with opinions held by Moffatt & Nichol or its employees.



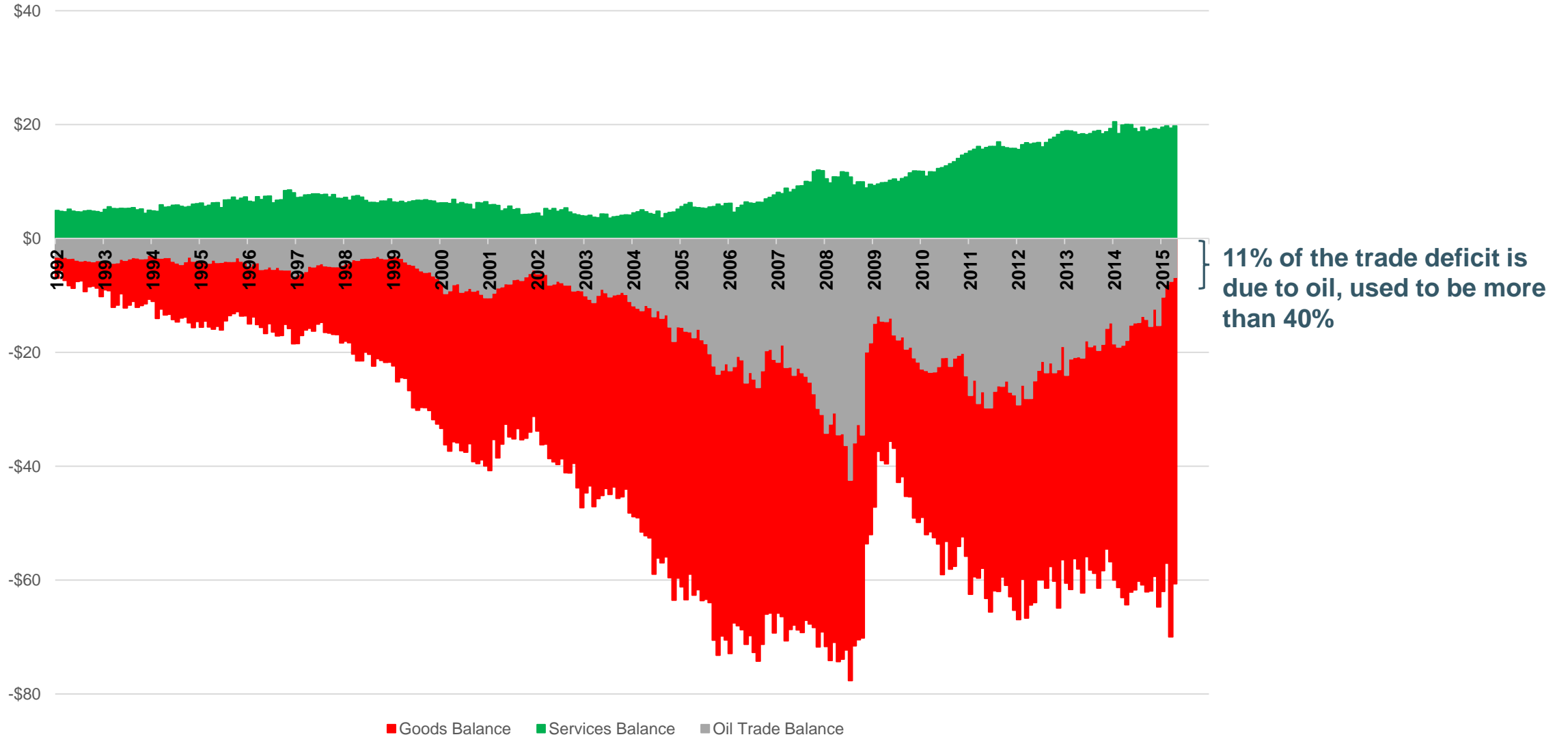
Main messages

- Exports are a national economic priority
- Growing global middle class is the opportunity but also the ultimate logistics challenge
- The US must improve freight corridor productivity to match or exceed that of its competitors in the global market place



US Trade deficit remains high despite improving oil trade

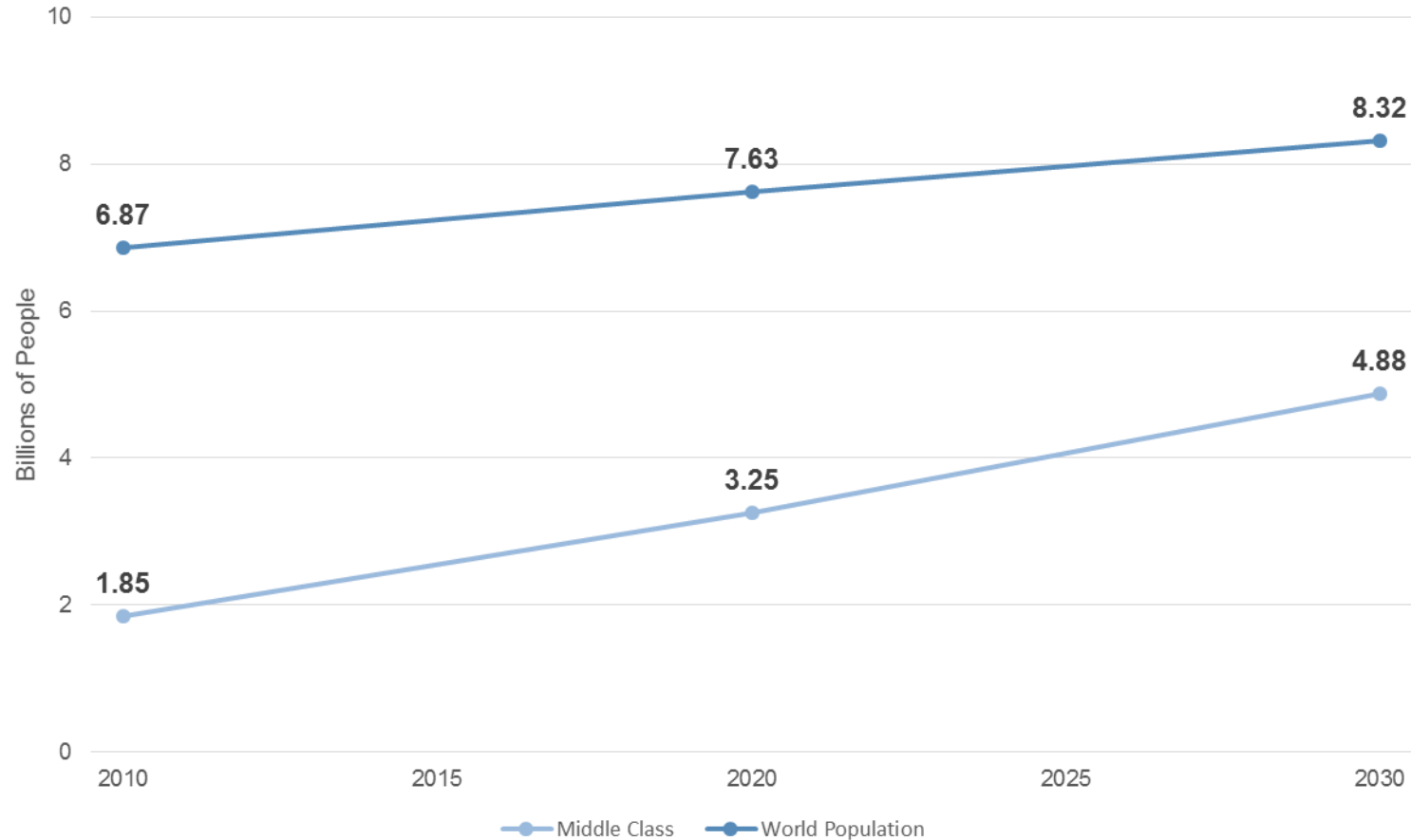
US TRADE DEFICIT





Trade deficit can be reduced by focusing on global consumers

WORLD POPULATION AND OECD GLOBAL MIDDLE CLASS PROJECTIONS



*Emerging markets are more than just large economies growing quickly, they are developing significant middle classes too. For the developed economies to sustain higher growth in the long term, they must focus on this market segment. Developed economies need growth in order to support their retirees. Need more infrastructure and less waste if these forecasts are correct. **This is the ultimate global logistics challenge.***



What can the US competitively export?

TOP 10 HIGH POTENTIAL US NET EXPORTS*

Containerized		Score	Bulk/Breakbulk		Score
	Wood Pulp Scrap and Waste	9.4	→	Oil Seeds (Soy)	32.7
→	Oil Seeds (Soy)	1.1	→	Meat and Other Edible Animal Parts	28.7
→	Raw Hides and Leather	0.8	→	Cereal Grains	3.9
→	Cotton – Untreated, Yarn and Woven Fabric	0.7	→	Animal Feed	3.4
→	Animal Feed	0.7		Wood and Charcoal	0.4
→	Meat and Other Edible Animal Parts	0.3		Crude Oil and Refined Petroleum/Natural Gas Products	0.3
	Plastic Feedstock and Manufactured Goods	0.2	→	Live Animals	0.2
	Iron and Steel	0.1		Wood Pulp Scrap and Waste	0.2
	Paper and Paperboard	0.1	→	Fish and Crustaceans	0.1
	Chemical Products	0.1	→	Dairy Products, including Eggs and Honey	0.1
→	Cereals	0.1		Organic Chemicals	0.1
	Organic Chemicals	0.1		Plastics Feedstock and Manufactured Goods	0.1

**Based on relative comparative advantage as defined by Bela Belassi*

Agriculture, Capital Goods, Energy

Labor is more expensive and capital is cheaper in the US compared to fast growing emerging market economies such as China. The US has comparative advantage (and competitive) advantages in the production of goods that use little labor. This is shown in the list of goods that the US has been prone to export.

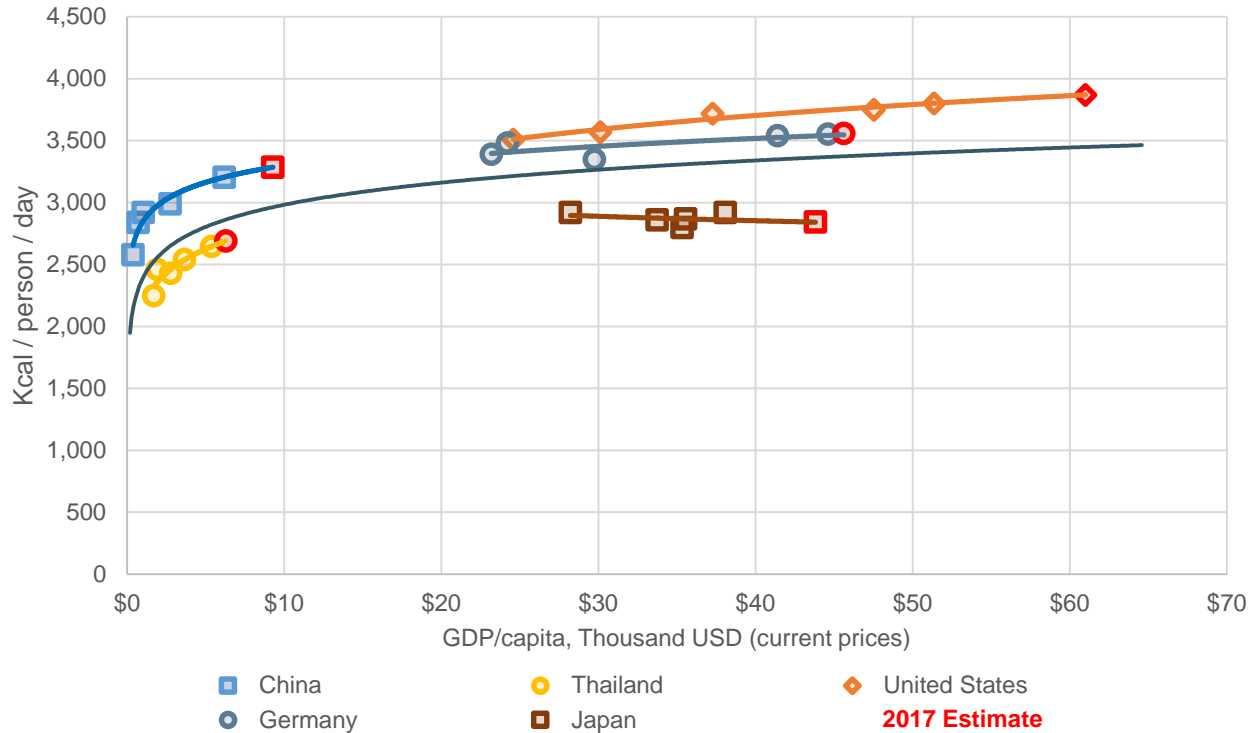
Agriculture dominates both top ten lists.

Source: US Census Bureau, Moffatt & Nichol

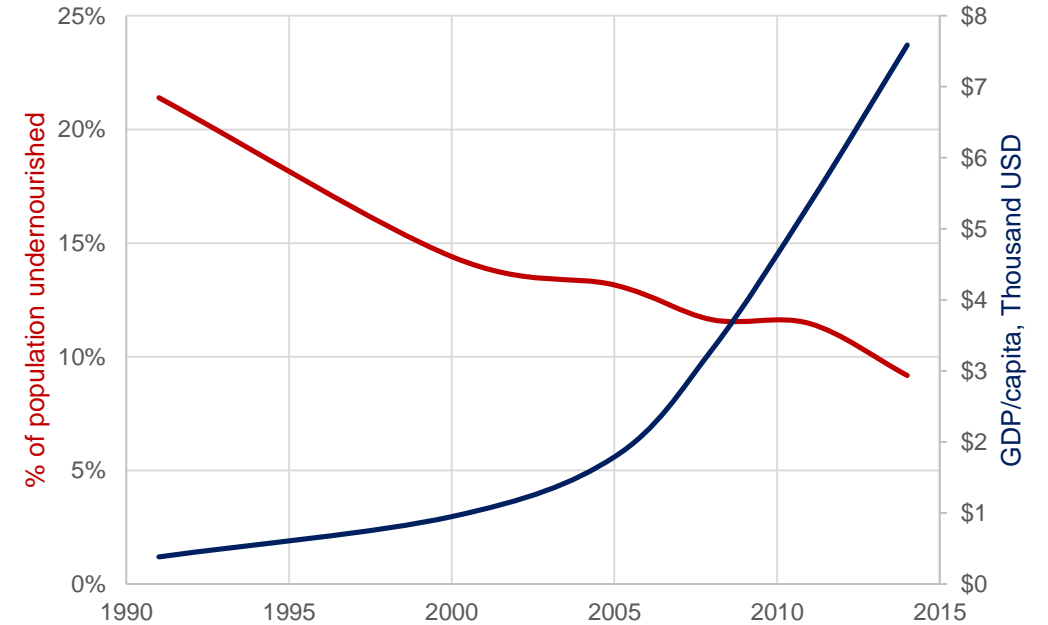


China's increasing food consumption in line with GDP growth

FOOD CONSUMPTION VS GDP/CAPITA, 1990-2012



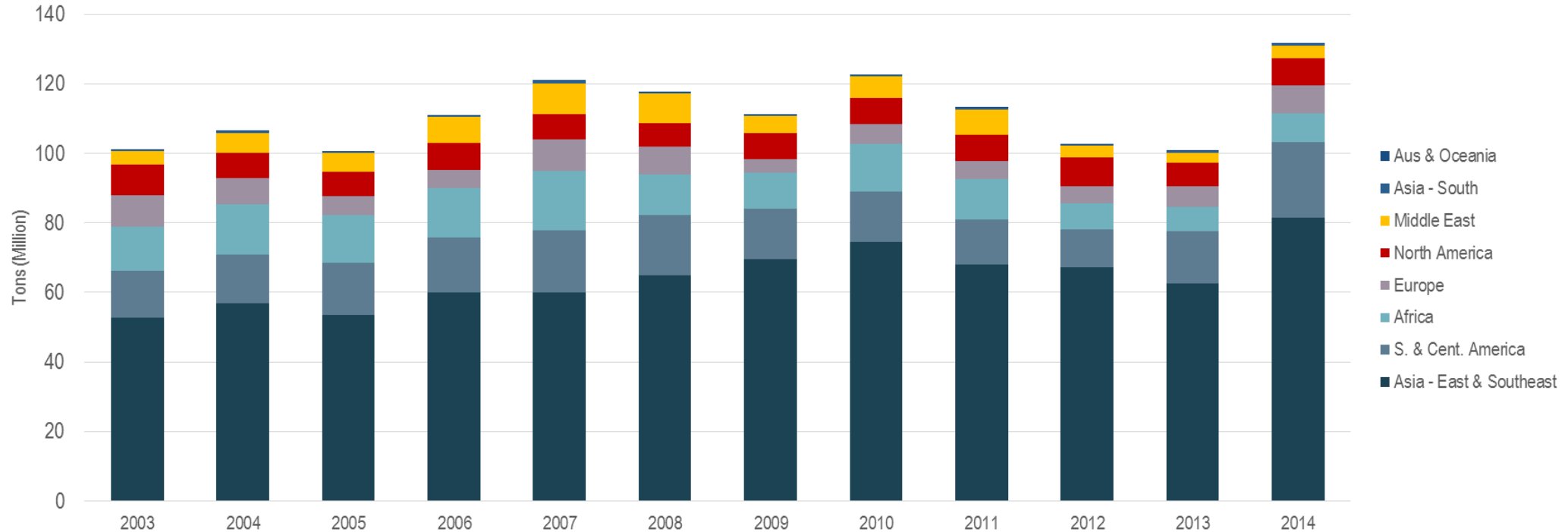
PERCENT OF CHINA'S POPULATION UNDERNOURISHED





Asia is the dominant destination of US grains and oilseeds

US GRAIN AND OILSEED EXPORTS (MILLION METRIC TONS) BY DESTINATION



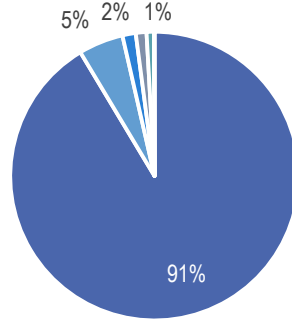
	2003	2005	2007	2009	2011	2013	2014	+/- Share
Asia - East & Southeast	52%	53%	50%	63%	60%	62%	62%	10%
China	11%	10%	10%	21%	21%	34%	30%	19%
South & Central America	14%	15%	15%	13%	11%	15%	17%	3%
Africa	13%	14%	14%	9%	11%	7%	6%	-6%
Europe	9%	5%	7%	4%	4%	6%	6%	-3%
North America	9%	7%	6%	7%	7%	7%	6%	-3%
Middle East	4%	5%	7%	4%	6%	3%	3%	-1%
Asia - South	0%	0%	1%	0%	0%	0%	0%	0%
	100%	100%	100%	100%	100%	100%	100%	

Source: US Census Bureau, Moffatt & Nichol



East coast grain and oil seed destinations are more diversified

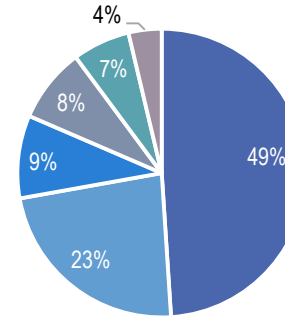
COLOMBIA-SNAKE



25 M tons
99% bulk
1% containerized

- Asia - East & Southeast
- S. & Cent. America
- Middle East
- Asia - South

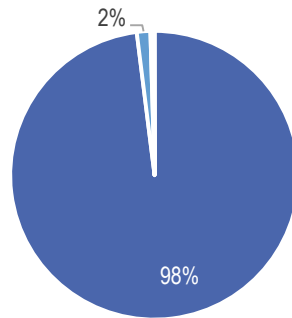
NEW ORLEANS, LA



69 M tons
100% bulk
0% containerized

- Asia - East & Southeast
- S. & Cent. America
- North America
- Europe
- Africa
- Other

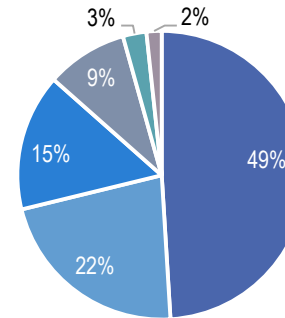
SEATTLE, WA



11 M tons
83% bulk
17% containerized

- Asia - East & Southeast
- Middle East
- Aus & Oceania
- S. & Cent. America
- Europe
- Other

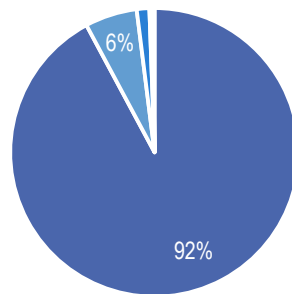
NORFOLK, VA



3 M tons
77% bulk
23% containerized

- Asia - East & Southeast
- S. & Cent. America
- Africa
- Europe
- North America
- Other

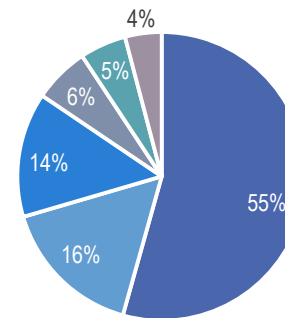
LA/LB



4 M tons
24% bulk
76% containerized

- Asia - East & Southeast
- Middle East
- S. & Cent. America
- Asia - South
- Europe
- Other

NY/NJ



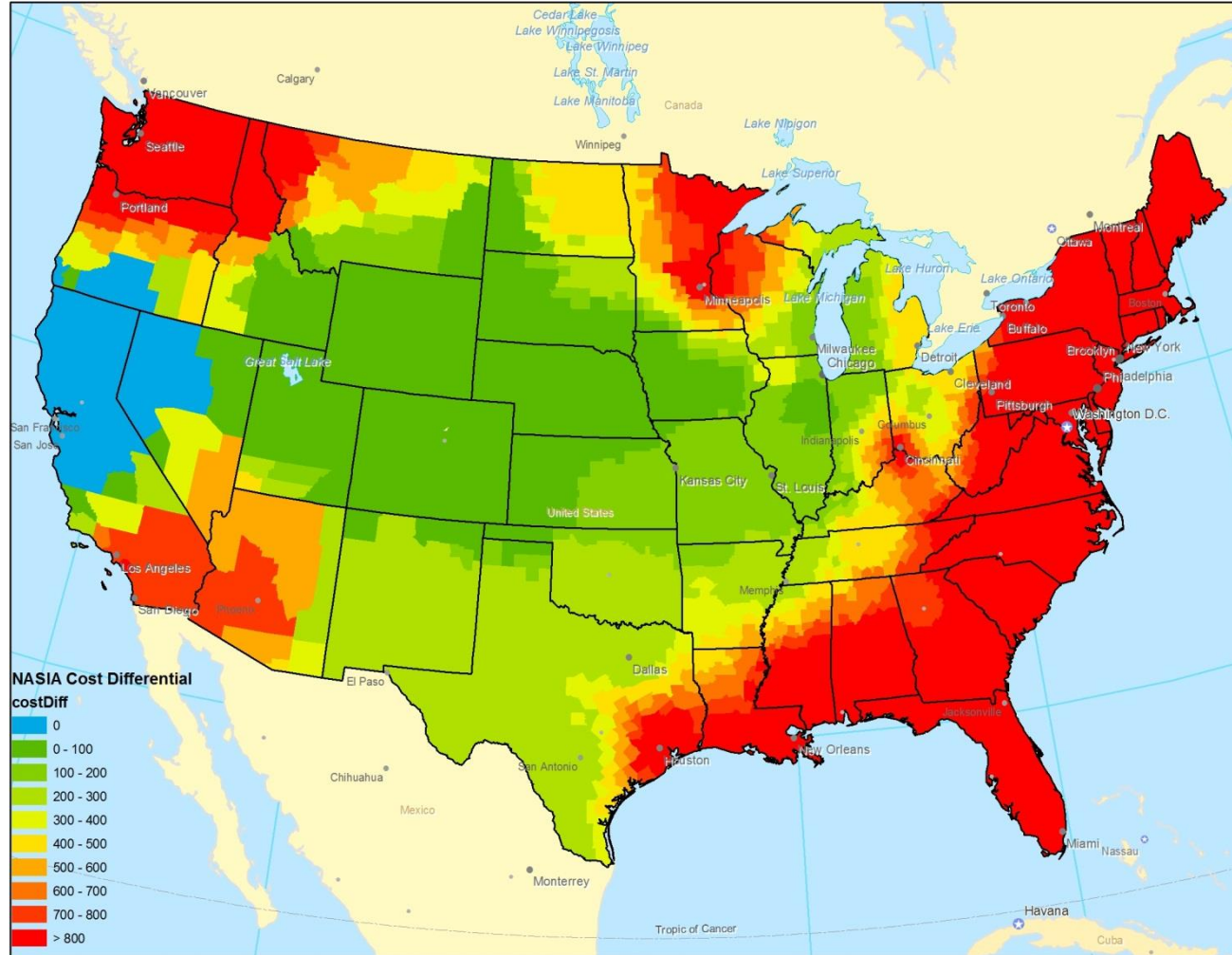
800,000 tons
53% bulk
47% containerized

- Asia - East & Southeast
- Africa
- S. & Cent. America
- North America
- Europe
- Other



West Coast ports remain as low cost path to US heartlands

PORT OF OAKLAND'S COST DIFFERENTIAL OF SERVING INLAND EXPORTS OF A SPECIFIC COMMODITY DESTINED TO NORTH ASIA

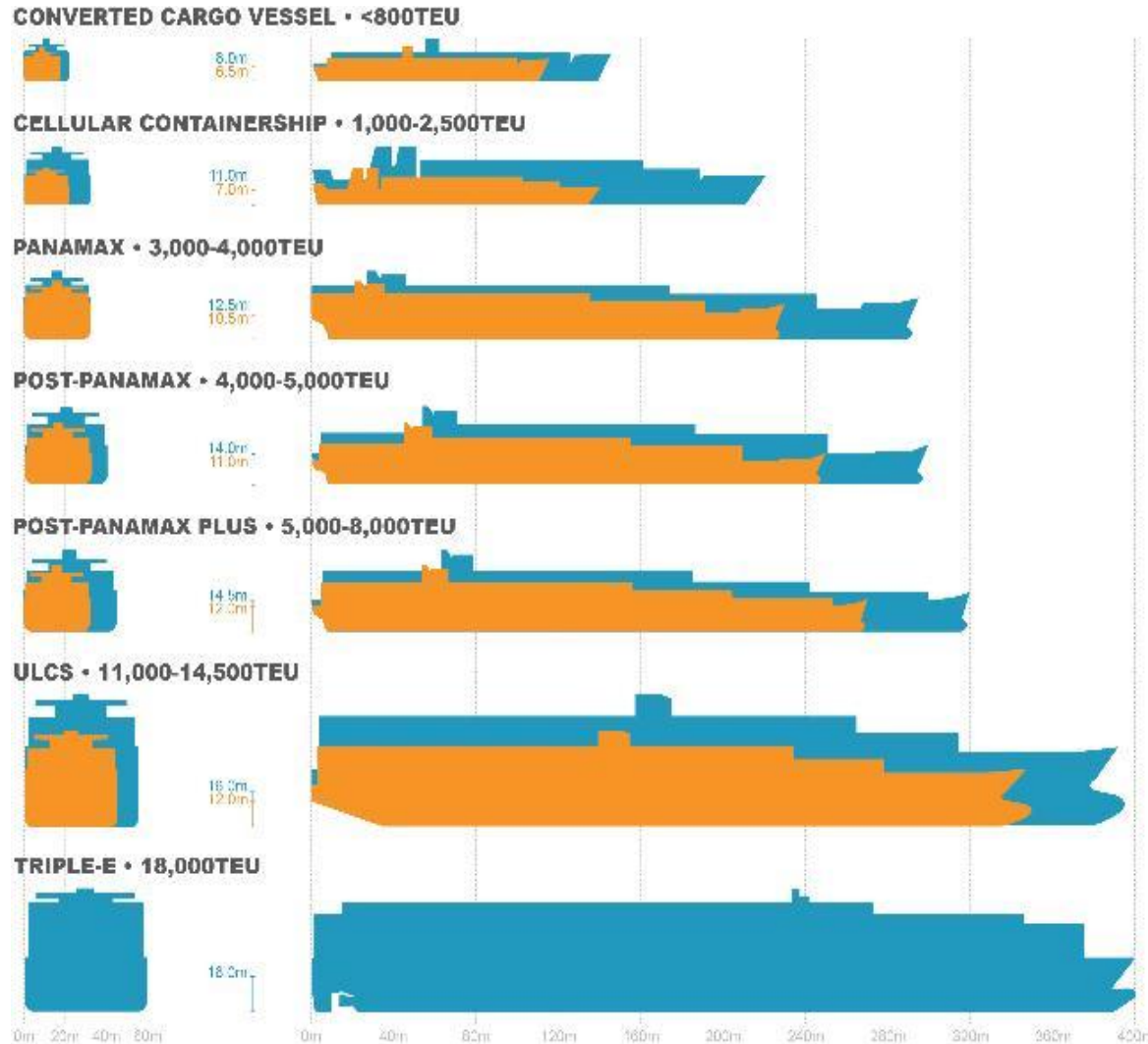


Focus is not on segments of supply chains but total gateway operating costs



Ships continue to get larger

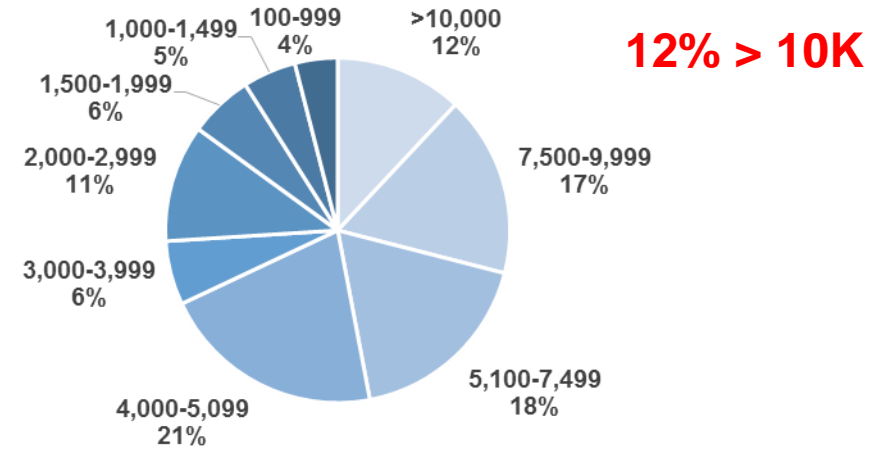
EVOLUTION OF CONTAINERSHIP SIZE



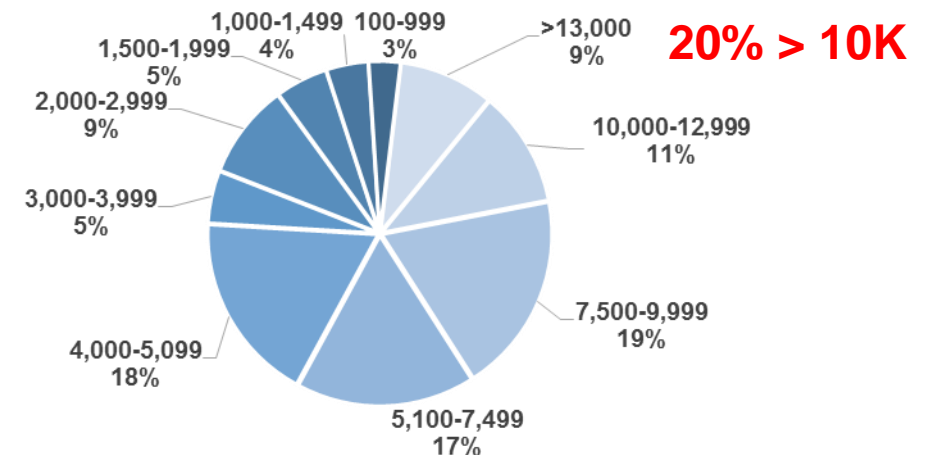
Source: Alphaliner, Moffatt & Nichol

FLEET CAPACITY BREAKDOWN BY TEU SIZE RANGE

As of November 1, 2012



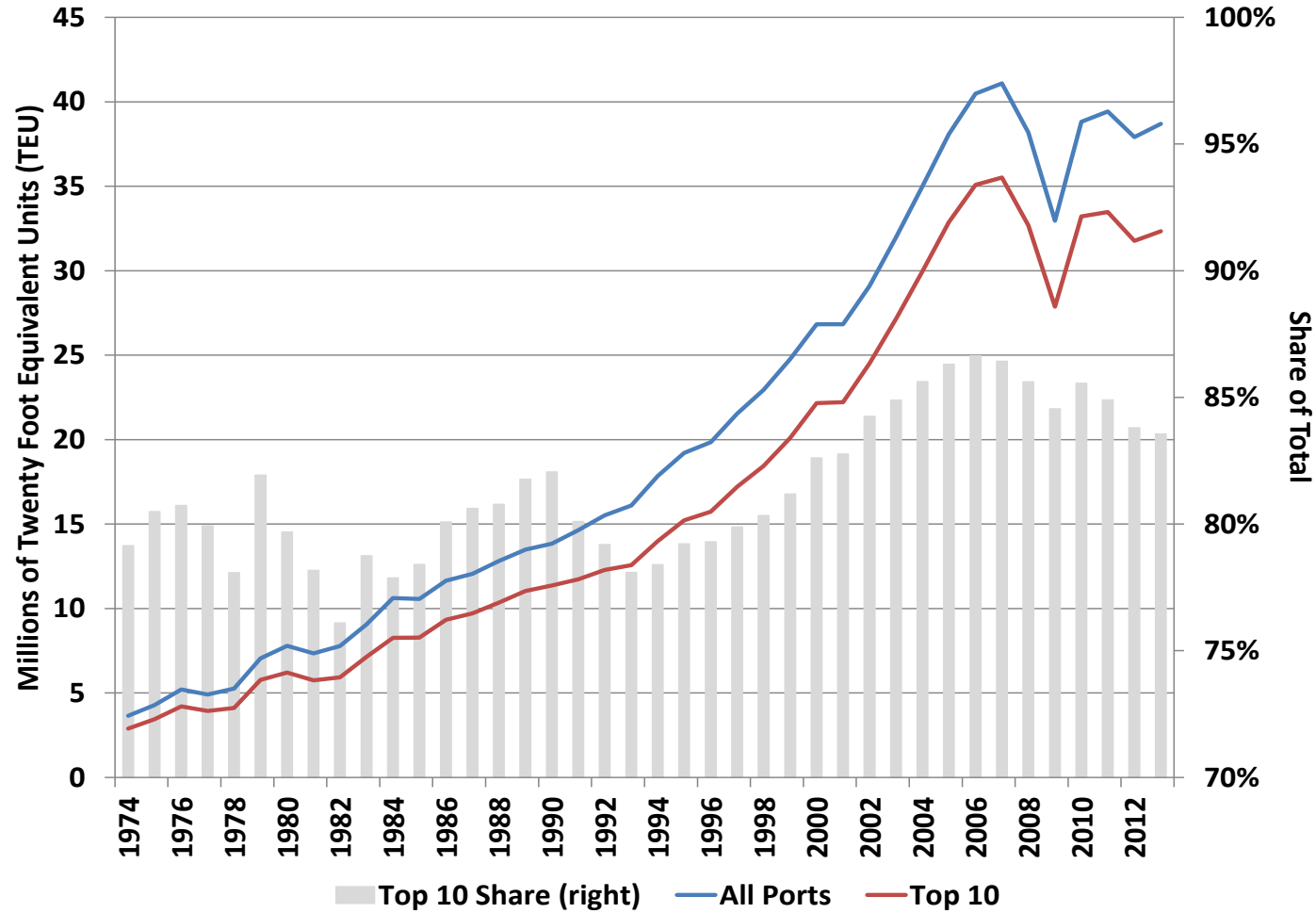
As of April 1, 2015





More freight in fewer gateways

US INTERNATIONAL CONTAINER VOLUMES AND PORT SHARES: 1974-2014



As volumes concentrate in fewer ships to reduce average fixed costs per slot, they concentrate in fewer ports to increase revenue-generating time.



Congestion is a global problem that needs local solutions

TRUCK TRAFFIC IN ROTTERDAM



PORT TRAFFIC IN SOUTHERN CALIFORNIA



TRUCK LINES AT THE PORT OF PARANAGUA, BRAZIL



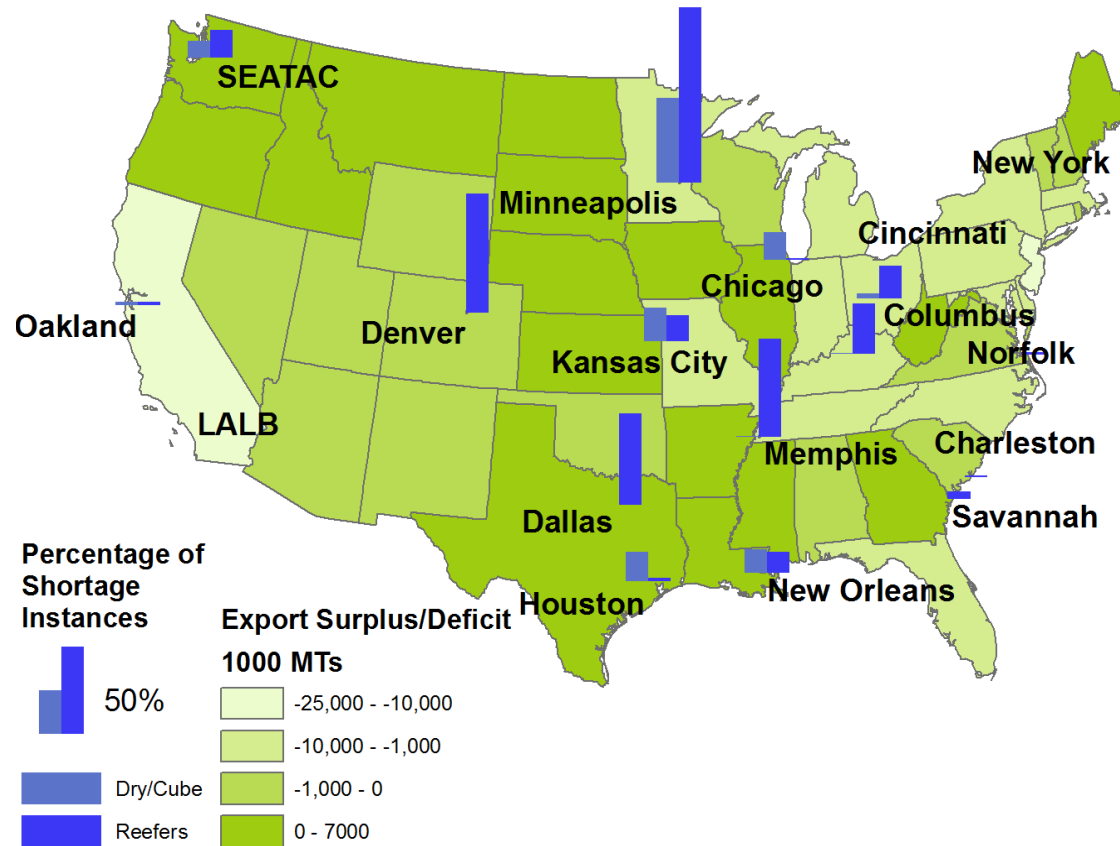
PORT OF SHANGHAI, CHINA





Empty container availability is very poor in less urban areas

CONTAINER SHORTAGE INCIDENCE BY CITY

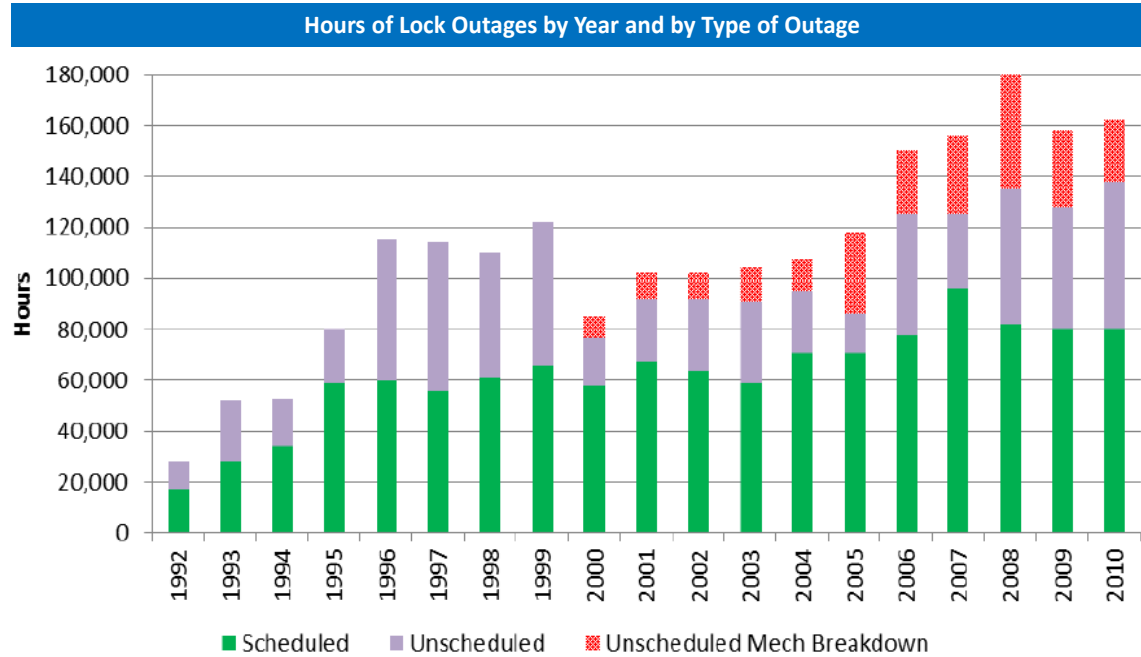


	Dry				Reefer		
	20ft	40ft	40ft High	Average	40ft	20ft	Average
East	New York	0%	0%	0%	0%	0%	0%
	Norfolk	0%	0%	0%	0%	2%	1%
	Charleston	0%	0%	0%	0%	13%	0%
North-Central	Savannah	0%	0%	0%	0%	8%	4%
	Minneapolis	45%	68%	25%	46%	100%	100%
	Chicago	0%	51%	13%	21%	2%	4%
	Cincinnati	0%	0%	0%	0%	4%	49%
South Central	Columbus	0%	6%	0%	2%	8%	32%
	Kansas City	2%	51%	4%	19%	0%	42%
	Memphis	0%	2%	0%	1%	13%	100%
	New Orleans	11%	15%	19%	15%	11%	28%
West	Dallas	0%	0%	0%	0%	2%	98%
	Houston	26%	49%	2%	26%	0%	8%
	Denver	0%	0%	0%	0%	55%	70%
West	LALB	0%	0%	0%	0%	0%	0%
	Oakland	9%	0%	0%	3%	8%	4%
	Seattle	4%	0%	21%	8%	0%	8%
	Tacoma	0%	11%	25%	12%	51%	2%
Average	5%	14%	6%	8%	15%	30%	23%

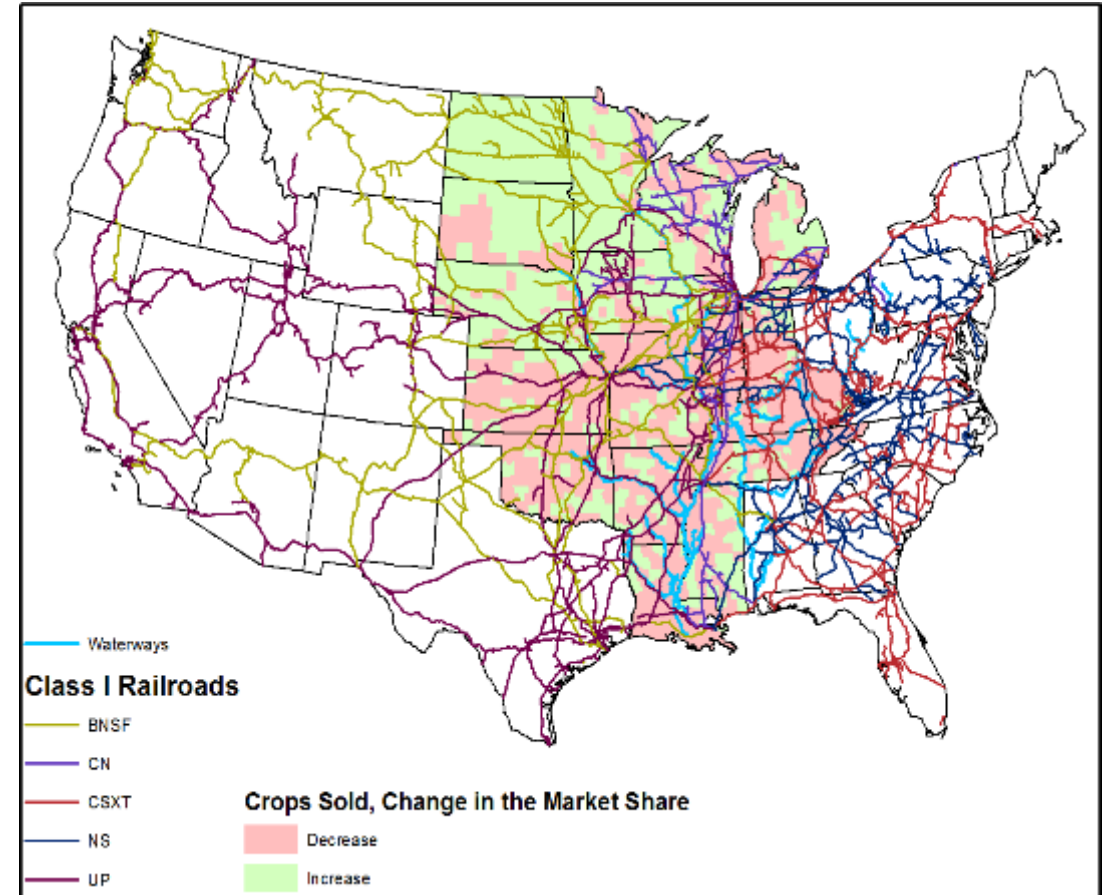
Exporters in areas of the Midwest that are not very urban have the least amounts of containers available. This hampers agricultural exports that are best suited for containerization.



Deteriorating US inland infrastructure a serious problem



CHANGES IN SHARE OF CROP PRODUCTION: 1997 VS 2012



SHARES OF US GRAIN AND OIL SEED EXPORTS

	2003	2005	2007	2009	2011	2013	2014	+/- Share
New Orleans	61%	52%	51%	52%	48%	49%	52%	-8.7%
Columbia-Snake	14%	16%	16%	15%	18%	20%	19%	5.2%
Seattle, WA	8%	13%	11%	12%	12%	8%	8%	0.2%
Los Angeles, CA	1%	2%	4%	3%	4%	4%	3%	2.1%
Norfolk, VA	1%	1%	2%	2%	2%	3%	2%	1.9%
Other	15%	16%	17%	15%	17%	16%	14%	-0.6%
	100%	100%	100%	100%	100%	100%	100%	

Soybean Transportation Coalition studied US inland waterways. Key points: *54% of the Inland Marine Transportation System's (IMTS) structures are more than 50 years old and 36% are more than 70 years old.* Along with water issues probably, this has impacted where grain is produced and exported. Grain increasingly moves on steel rivers (railways).



Brazil is becoming a competitive supplier



Cerrado Region
- Larger than US Cornbelt
- 3 growing seasons



In conclusion...

- Exports are a national economic priority
- Growing global middle class is the opportunity but also the ultimate logistics challenge
- The US must improve freight corridor productivity to match or exceed that of its competitors in the global market place



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