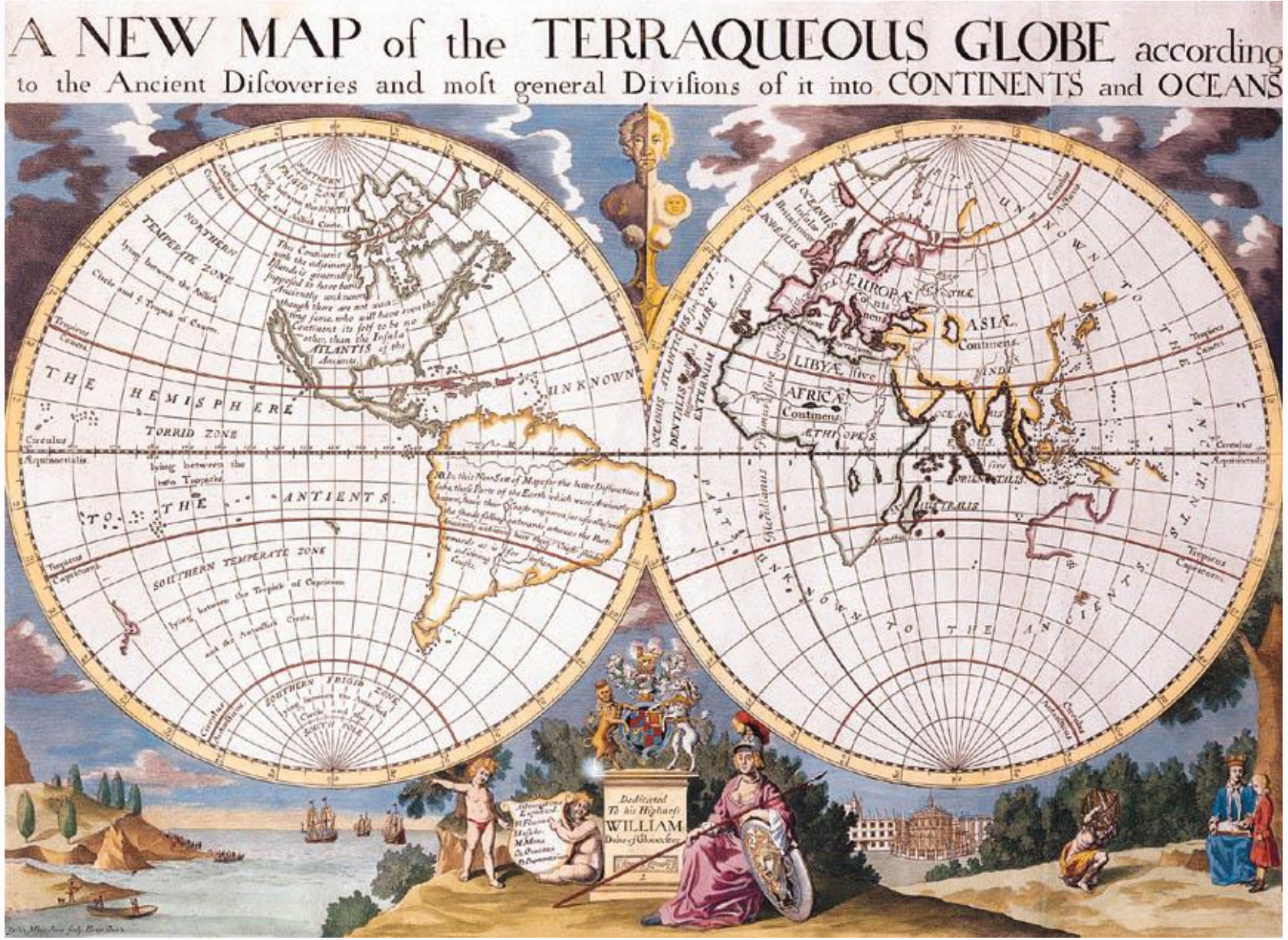


Perspectives on the unchartered global economic waters

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
- Strategic development of marine and freight transportation infrastructure
  - Freight planning and market analysis
  - Investment/privatization analysis
  - Cost-benefit analysis to support public private partnerships
  - Port selection/network analysis
  - Strategic development plans
  - Railroads and capacity expansion
  - Terminal design for all types of freight and passenger movement
  - Coastal engineering
  - Port and waterside construction (marinas)
  - 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.

The global economy is moving … but which way and how fast?

Transitioning to a more prosperous global economy characterized by a growing middle class

- More people, but older due to healthcare advances, and more urbanized
- Rising productivity (output per capita) from technological advances
- Improving resource recovery

Near term uncertainty due to structural factors

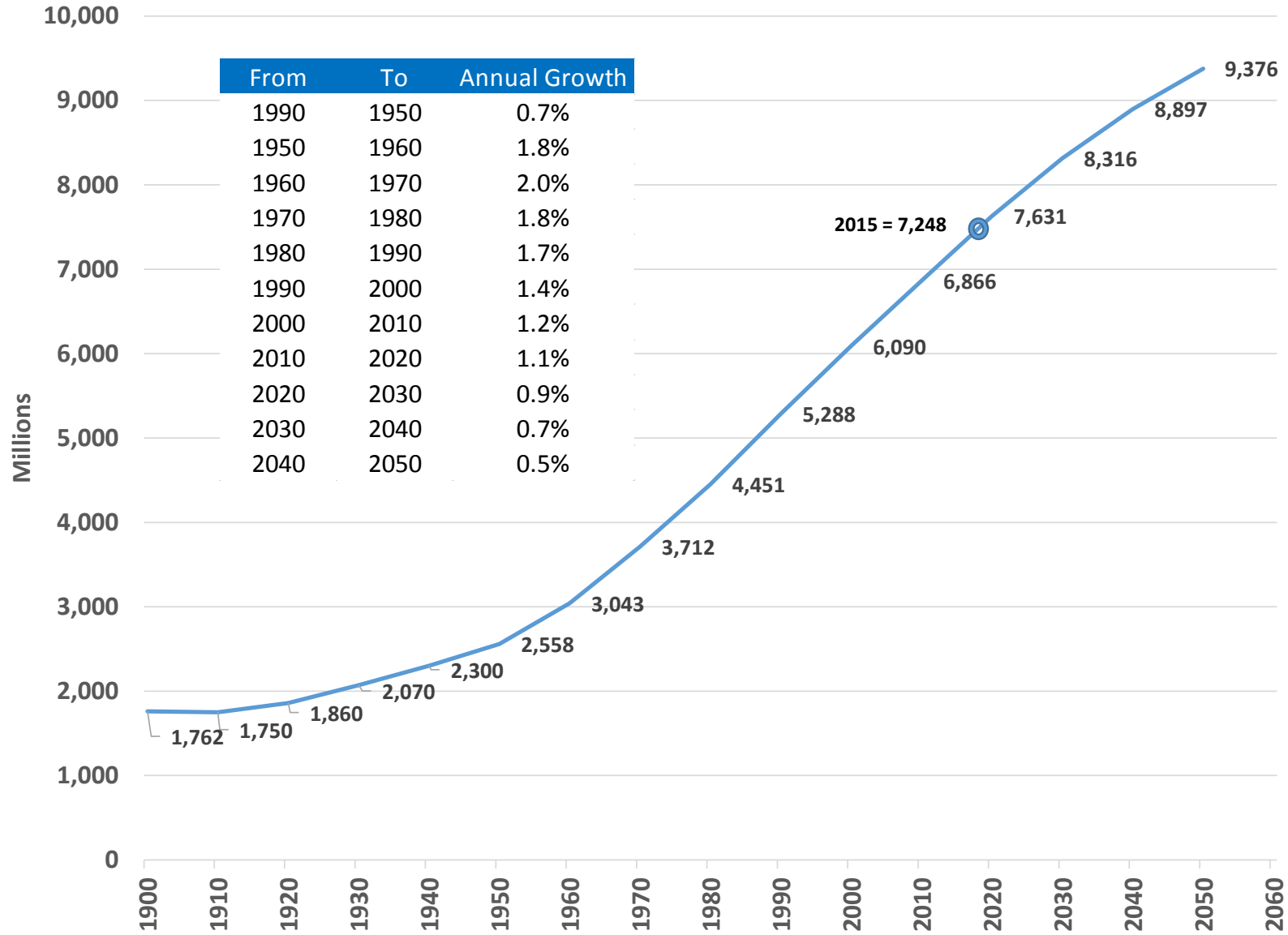
- Emerging markets not yet large or stable enough to offset slowing developed economies
- Growth of the physical stock of capital is characterized by booms and busts
- Technological advances are destroying jobs faster than creation of new ones
- Policy-maker (non-market force) reactions are less predictable

This is the right time to upgrade freight movement infrastructure

- Must keep pace with the changes in global trade logistics – both water and landside
- Interest rates are low and expected to rise only in the US in the near term
- Low input costs: commodities and labor

World population is expected to continue increasing

World population estimates: 1900 to 2050

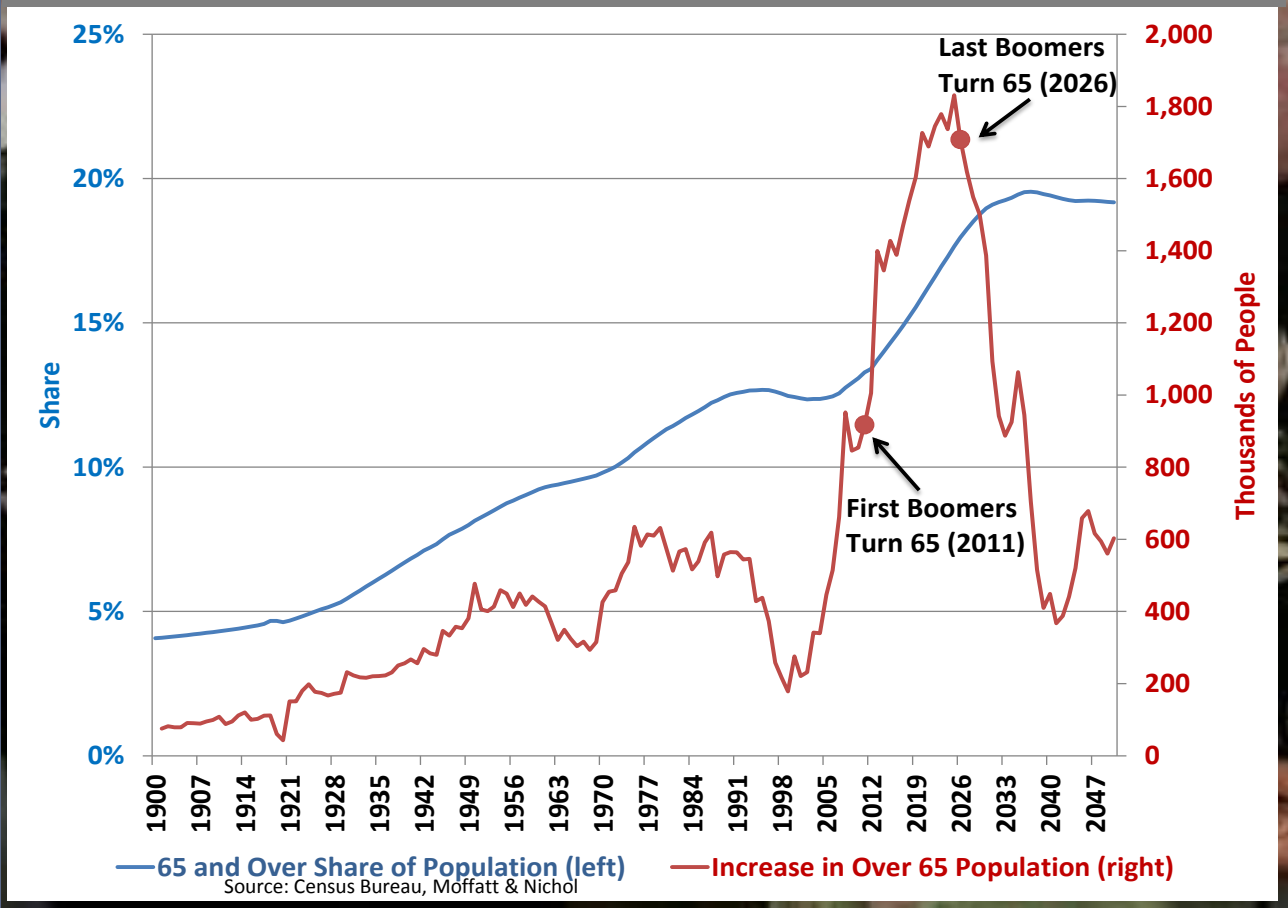


From	To	Annual Growth
1990	1950	0.7%
1950	1960	1.8%
1960	1970	2.0%
1970	1980	1.8%
1980	1990	1.7%
1990	2000	1.4%
2000	2010	1.2%
2010	2020	1.1%
2020	2030	0.9%
2030	2040	0.7%
2040	2050	0.5%

Source: United Nations, A Maddison

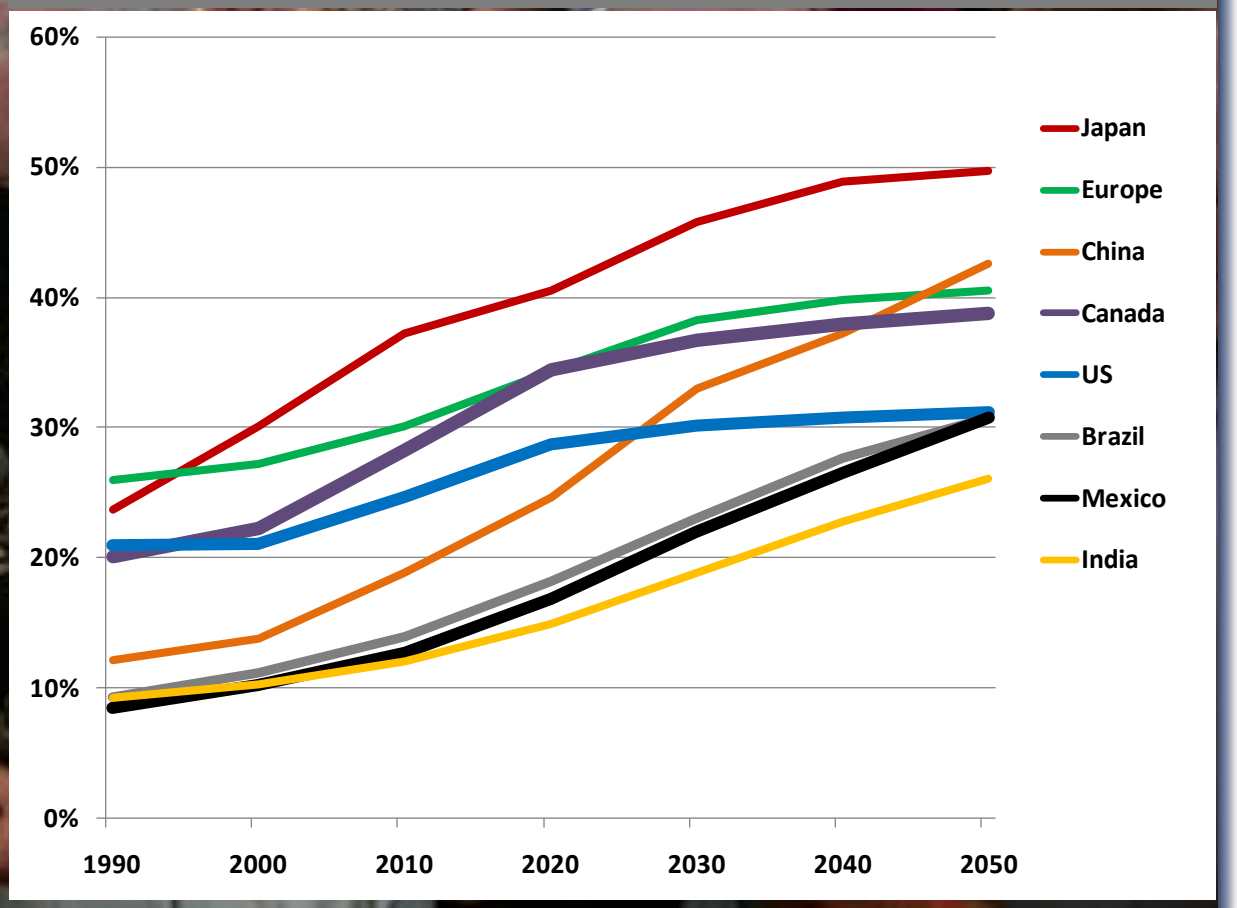
The "Grey Tsunami"

PEOPLE TURNING 65 AND THEIR SHARE OF US POPULATION: 1900 - 2050



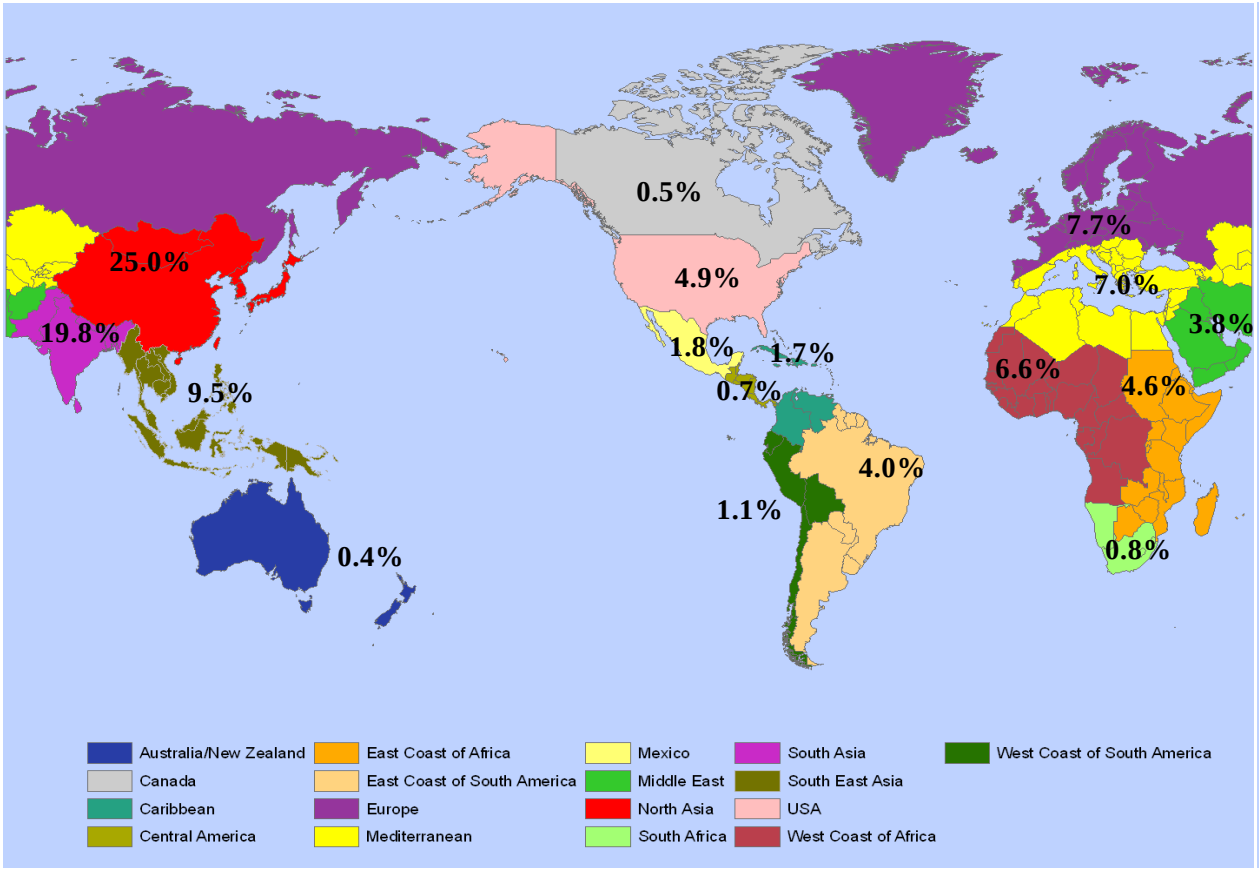
Source: Census Bureau, Moffatt & Nichol

PROPORTION OF POPULATION ABOVE 55 YEARS OF AGE

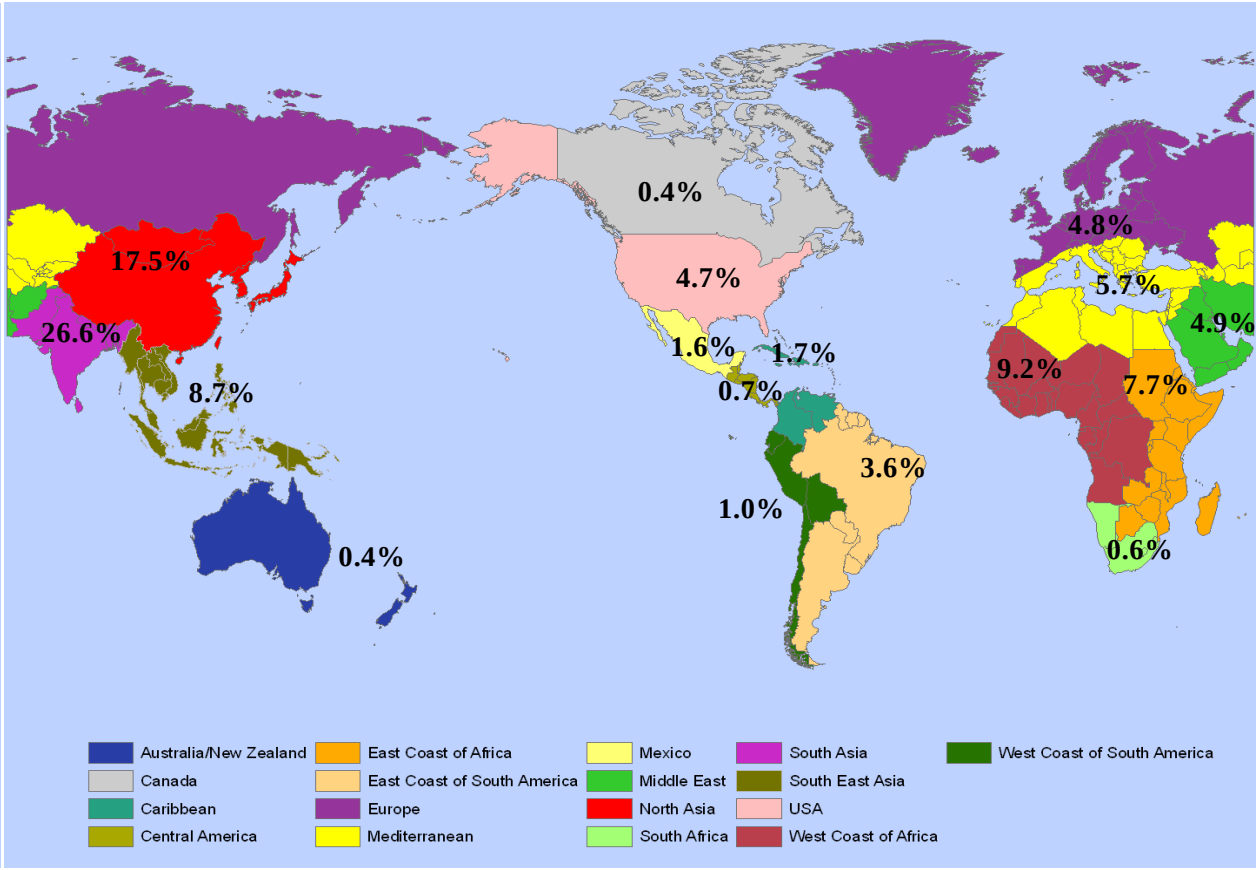


Population distribution by trade lane

TRADE LANE SHARES OF THE WORLD POPULATION IN 2010



TRADE LANE SHARES OF THE WORLD POPULATION IN 2050



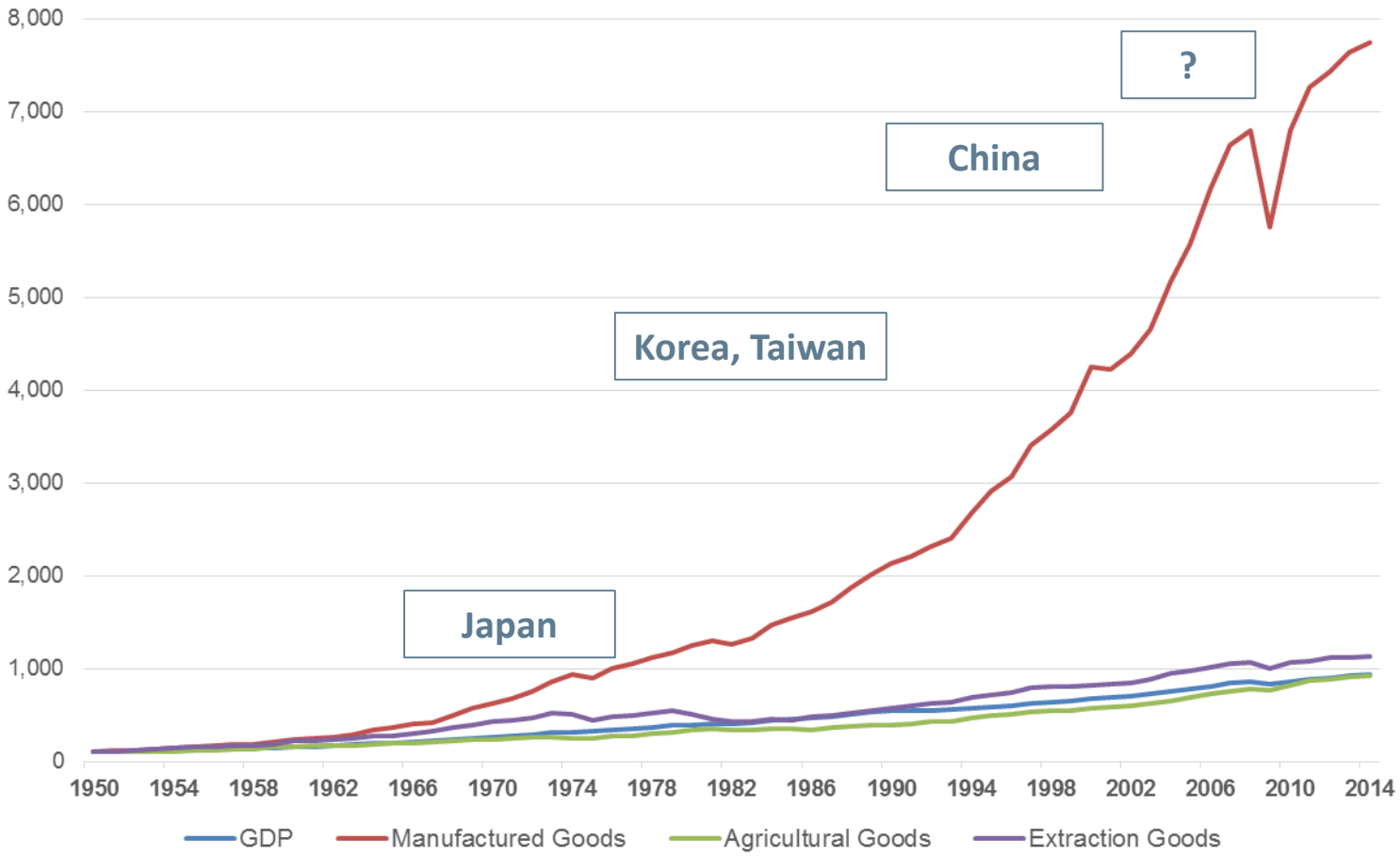
Larger: South Asia, Middle East, West Africa, East Africa

Smaller: The Americas, Caribbean, Europe, Mediterranean, S Africa,

Source: Census Bureau, Moffatt & Nichol

The drivers of global trade growth

WORLD REAL GDP AND TRADE INDEXES 1950-2013



1950 – 2014 CAGR	
Manufactured Goods	7.0%
Extraction Goods	3.9%
GDP	3.6%
Agricultural goods	3.6%

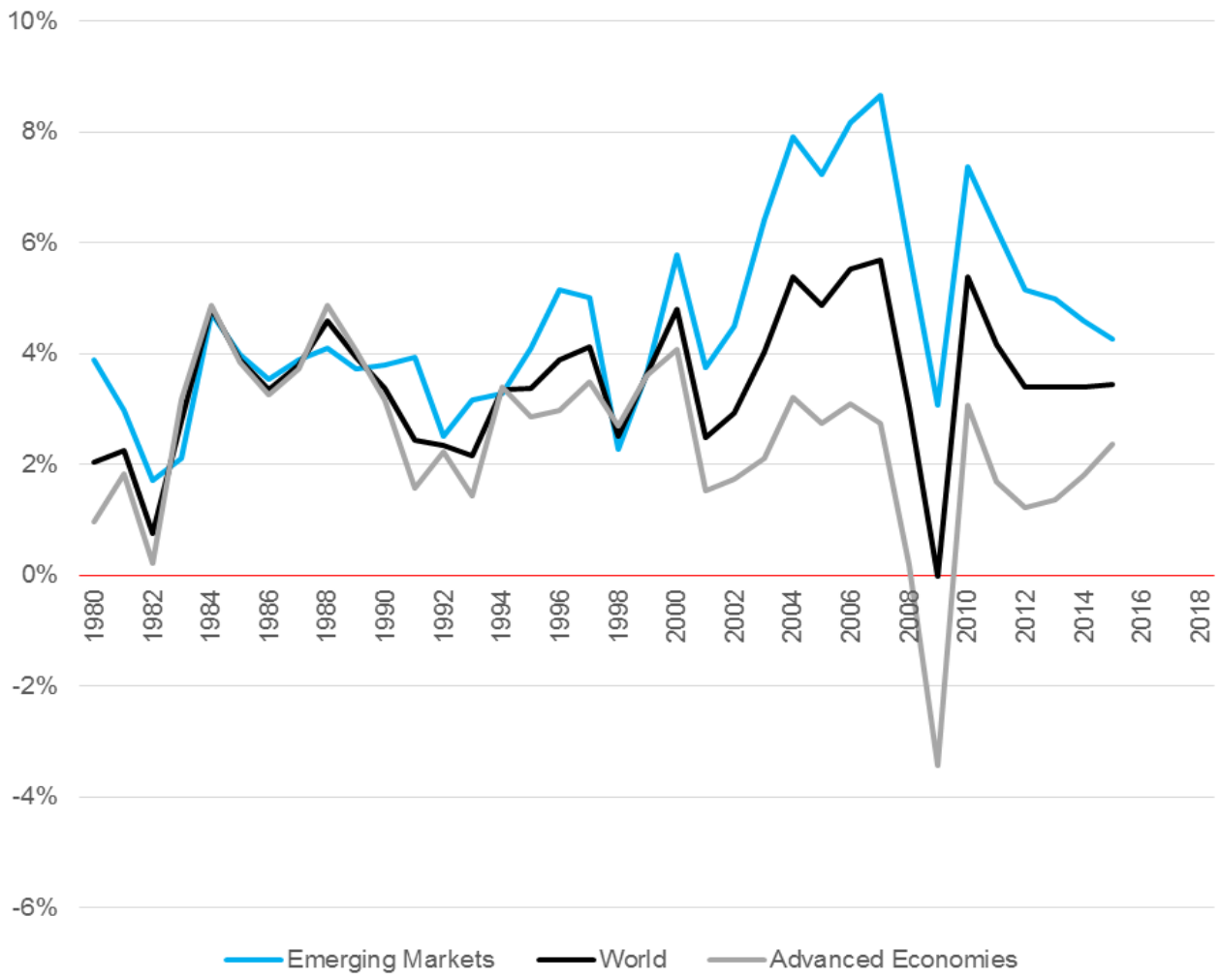
From 1950 to 2013, manufactured goods trade has grown twice as fast as real GDP. Among other trends, this is due to:

- Free Trade Agreements
- Information/Communication Technology
- Maritime and Inland Connectivity Infrastructure
- Demographic Trends

Source: WTO, Moffatt & Nichol

Divergent global economic growth

ANNUAL REAL GDP GROWTH



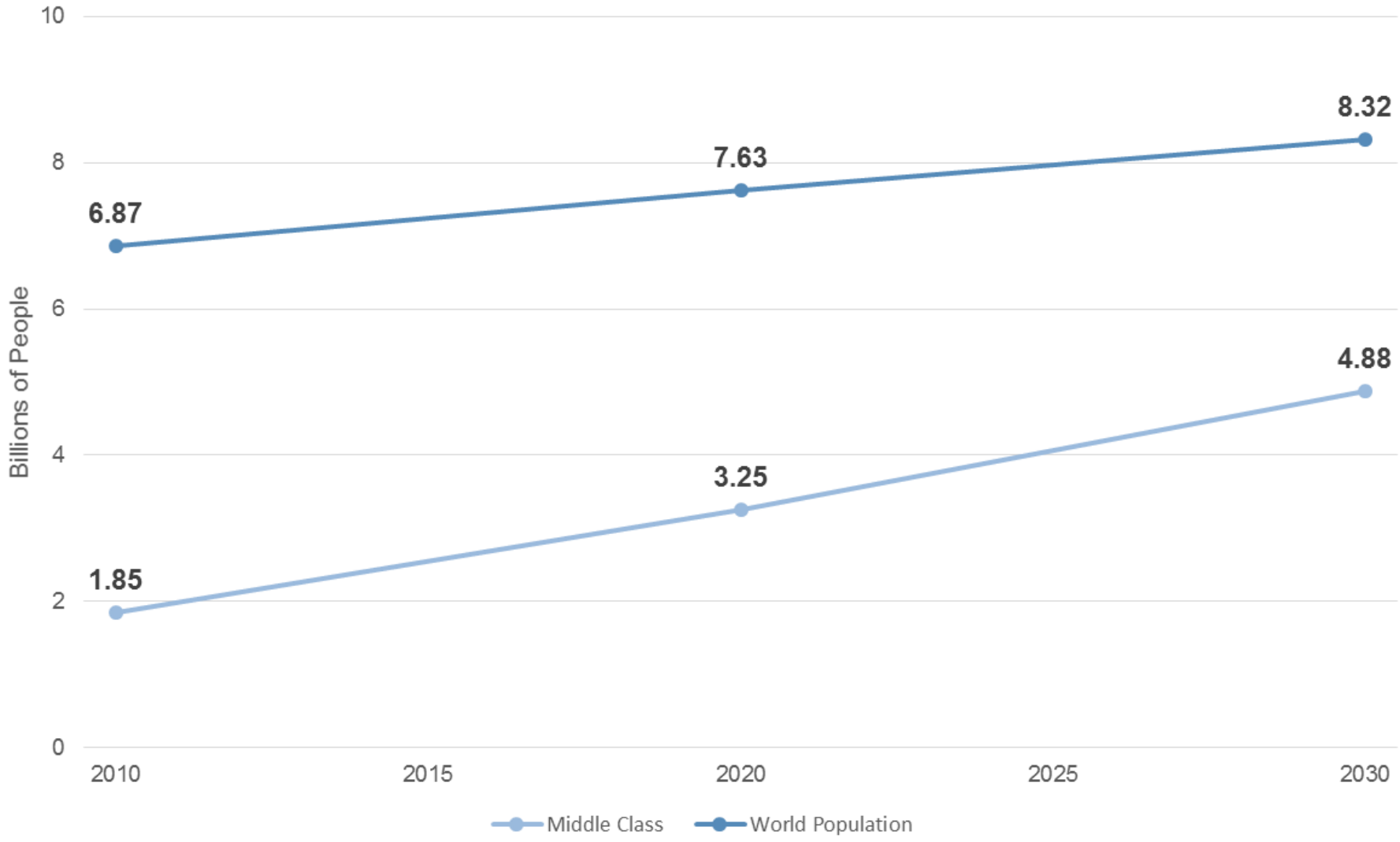
TOP 20 COUNTRIES BY NOMINAL GDP IN US$ BILLIONS

Rank	Country	1995	Country	2005	Country	2015E
1	US	$7,664	US	$13,094	US	$17,968
2	Japan	$5,334	Japan	$ 4,572	China	$11,385
3	Germany	$2,594	Germany	$ 2,866	Japan	$ 4,116
4	France	$1,611	UK	$ 2,412	Germany	$ 3,371
5	UK	$1,236	China	$ 2,269	UK	$ 2,865
6	Italy	$1,172	France	$ 2,207	France	$ 2,423
7	Brazil	$ 786	Italy	$ 1,857	India	$ 2,183
8	China	$ 732	Canada	$ 1,164	Italy	$ 1,819
9	Spain	$ 612	Spain	$ 1,159	Brazil	$ 1,800
10	Canada	$ 602	Korea	$ 898	Canada	$ 1,573
11	Korea	$ 556	Brazil	$ 892	Korea	$ 1,393
12	Netherlands	$ 447	Mexico	$ 866	Australia	$ 1,241
13	Australia	$ 379	India	$ 834	Russia	$ 1,236
14	India	$ 367	Russia	$ 764	Spain	$ 1,221
15	Mexico	$ 344	Australia	$ 734	Mexico	$ 1,161
16	Switzerland	$ 342	Netherlands	$ 680	Indonesia	$ 873
17	Russia	$ 313	Turkey	$ 483	Netherlands	$ 751
18	Argentina	$ 309	Switzerland	$ 408	Turkey	$ 722
19	Belgium	$ 289	Sweden	$ 389	Switzerland	$ 677
20	Taiwan	$ 279	Belgium	$ 388	Saudi Arabia	$ 632
Share	Emerging	12%	Emerging	16%	Emerging	34%
	US	30%	US	34%	US	30%

Source: IMF WEO, Moffatt & Nichol

Growing global middle class

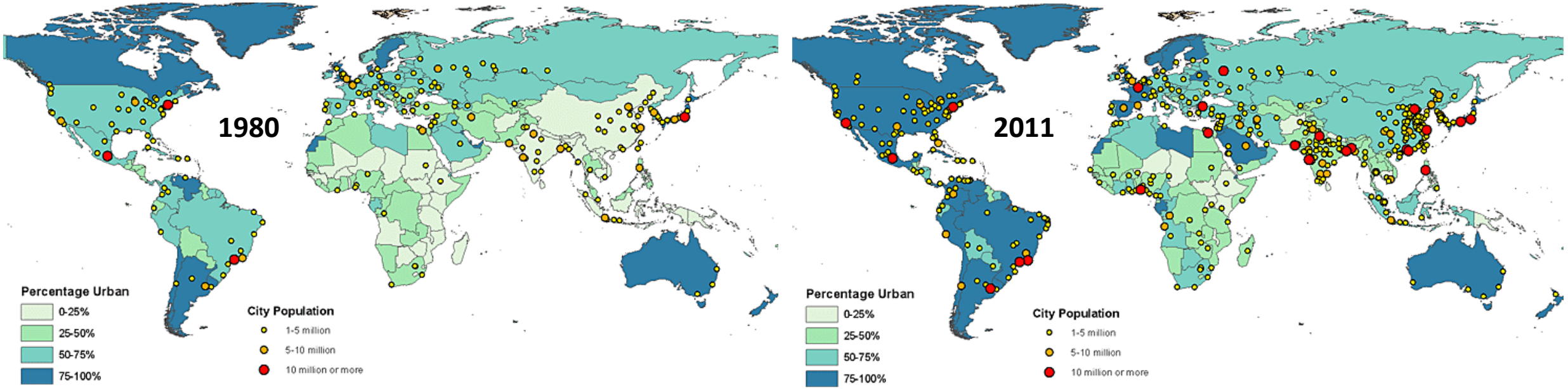
WORLD POPULATION AND OECD GLOBAL MIDDLE CLASS PROJECTIONS



Source: OECD, US Census Bureau

Increasingly Urbanized, Increasingly Congested

Percentage of urban population and agglomerations by size class: 1980 and 2011

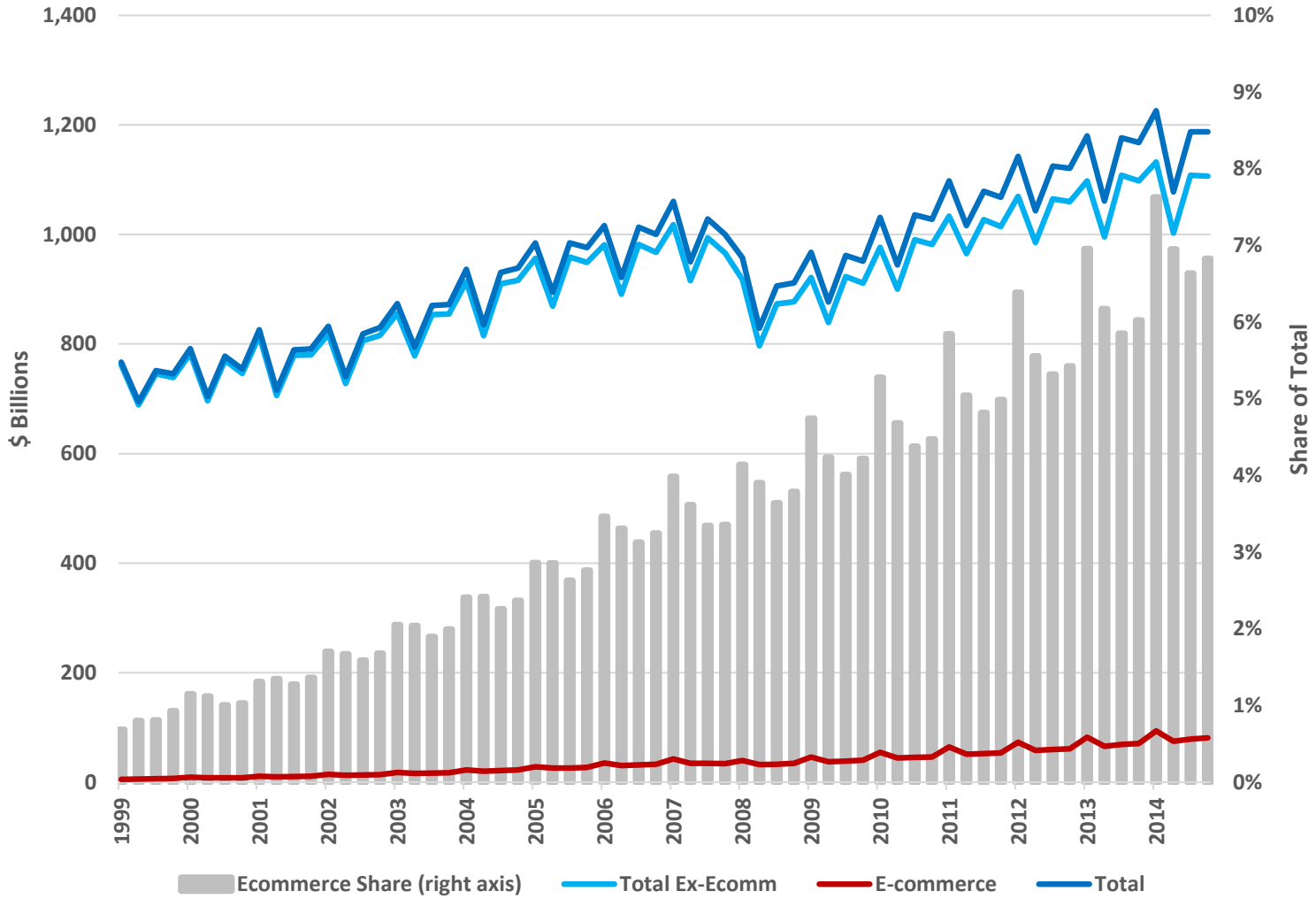


Three major migration trends in the US are to the south, to the coasts and to urban areas. Rest of the world is urbanizing too. Substitution of capital for labor in rural areas and higher income offered by manufacturing and services in urban areas drive migration to urban areas. Better service supply in urban areas also attracts retirees. In major port cities it is likely that congestion could worsen.

Source: UN Department of Economic and Social Affairs

Ecommerce continues to gain share of US retail sales

ECOMMERCE VS TOTAL RETAIL TRADE SALES



Ecommerce is gaining share of consumer spending in many countries, with the US among the countries leading the trend. Growing concentrations of populations in metropolitan regions and growing Internet subscriptions are main driver.

Source: US Census Bureau, Moffatt & Nichol

Supply chain/final delivery evolving and impacting retail strategy

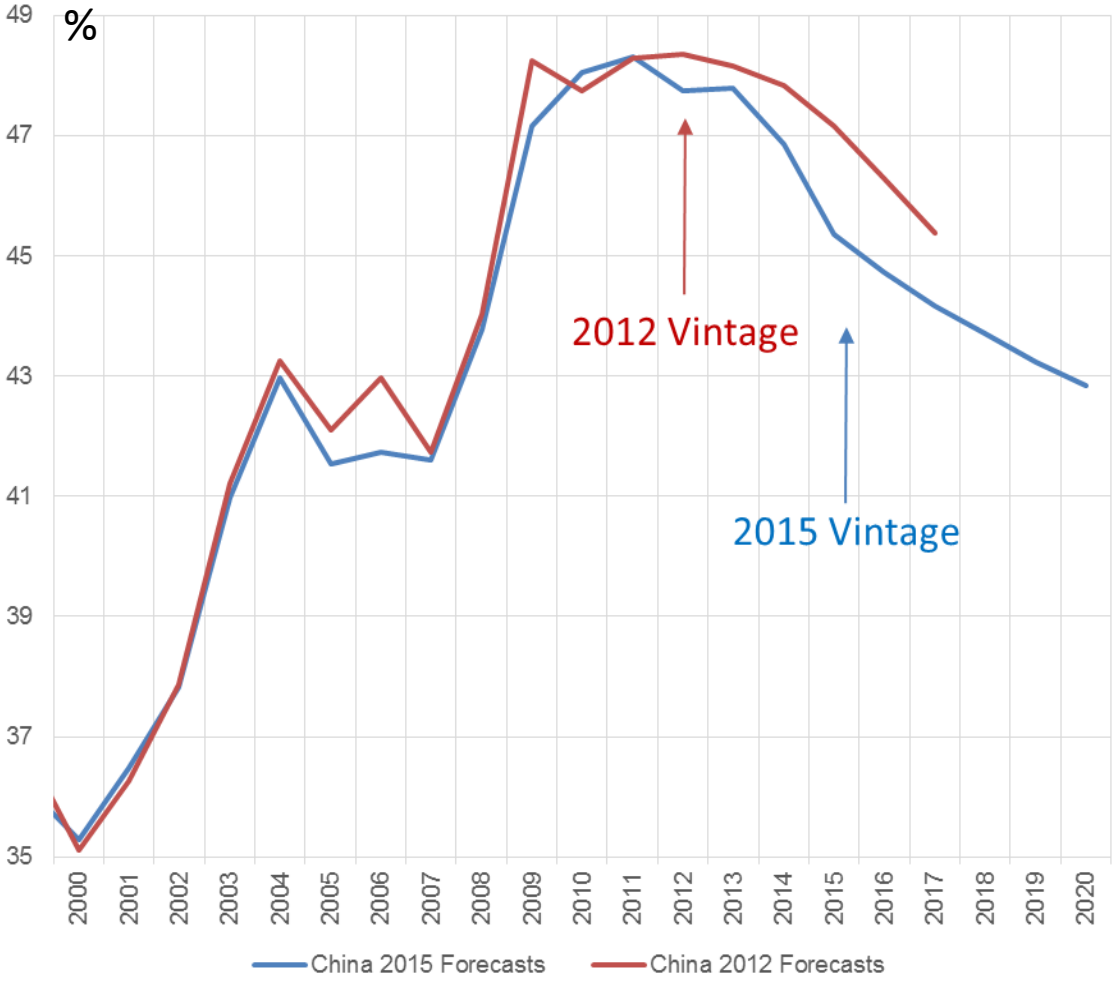
ECOMMERCE SERVICE SUPPLIERS

There are many new entrants in the ecommerce market and potentially even more will join. Significant evolution is the only discernible trend.

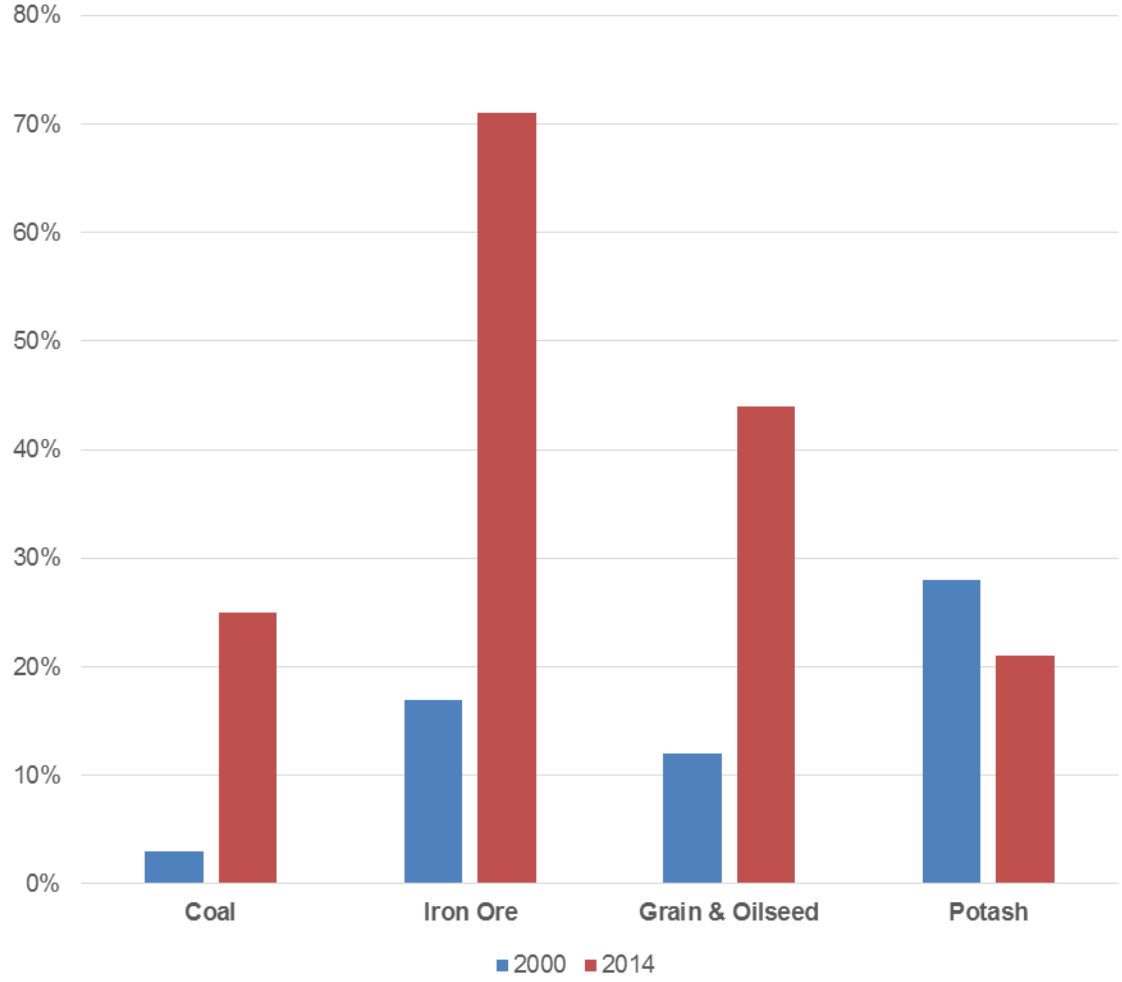
Source: UPS presentation at Port of Long Beach Pulse of the Port event

China has a large impact on commodity flows

INVESTMENT SHARE OF GDP AND IMF FORECASTS



CHINA'S SHARE OF WORLD COMMODITY IMPORTS

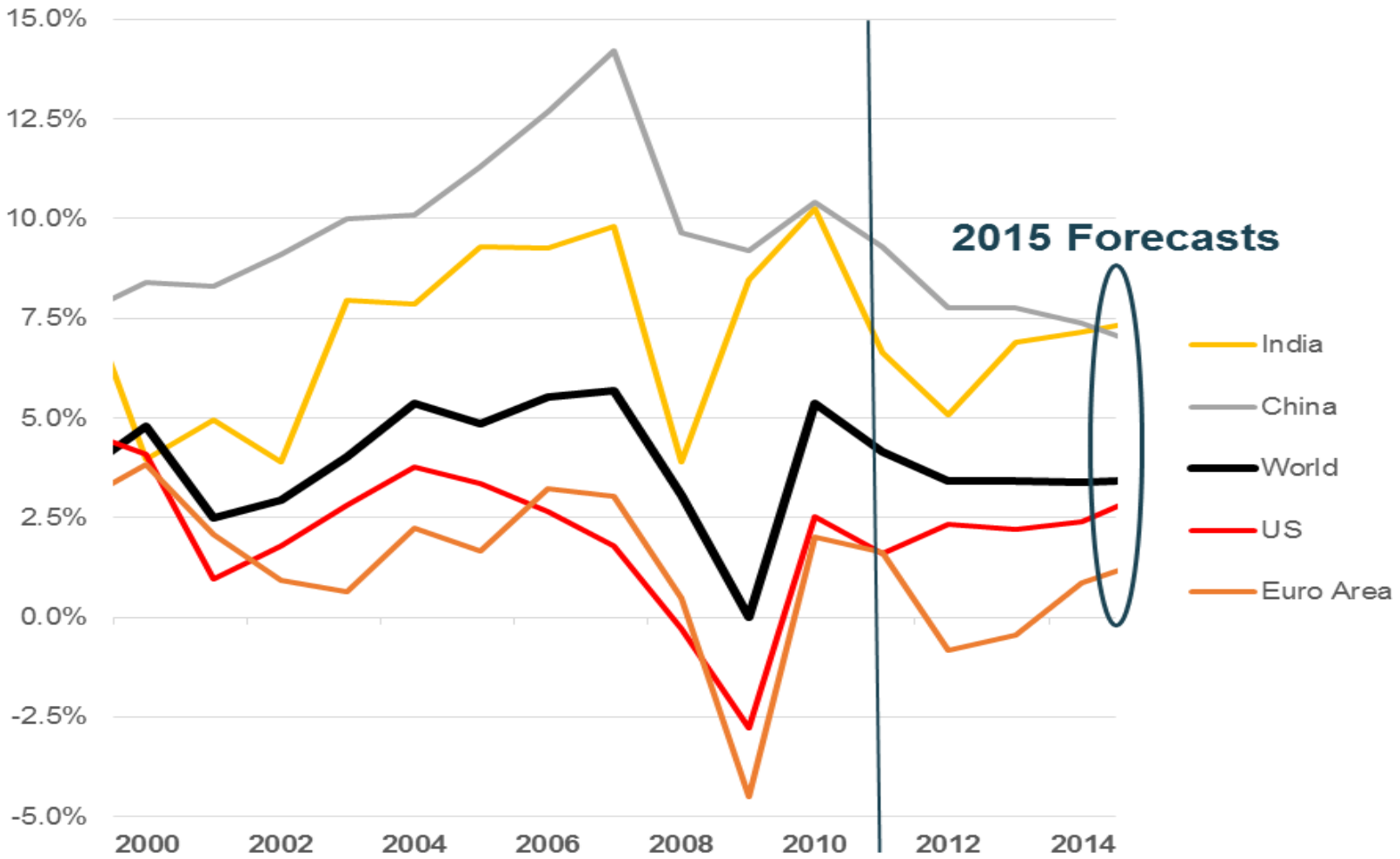


The 2011 5-Year Plan called for China's economy to be less dependent on exports and investment, and more dependent on domestic consumption spending. Since then the share of GDP coming from exports and investment has declined. China continues to have the largest share of global raw materials imports.

Source: IMF, UN Comtrade, Moffatt & Nichol

US has led global growth since 2011

REAL GDP GROWTH: MAJOR ECONOMIES

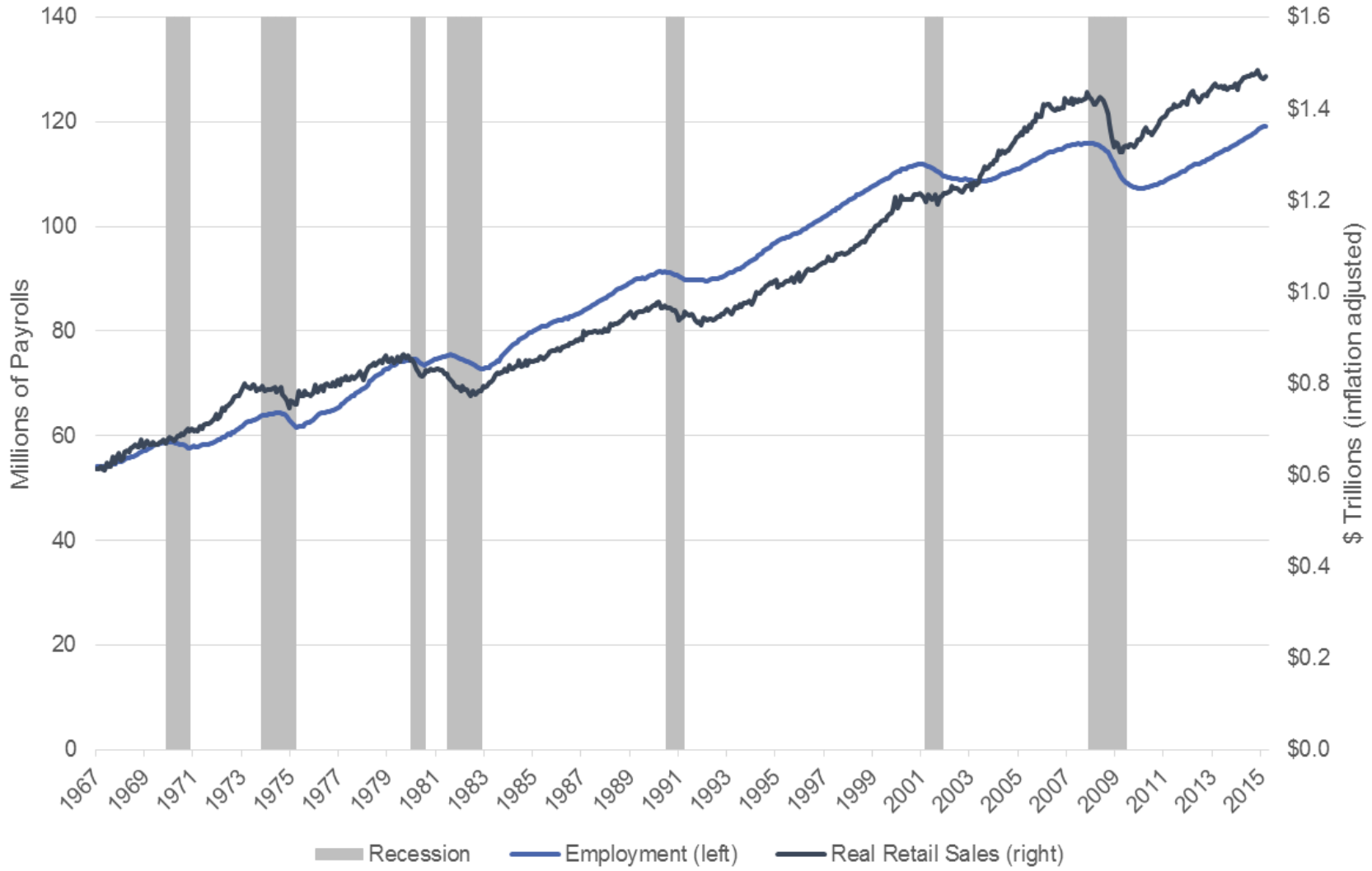


Between 2011 and 2015 the US is the only major economy to sustain higher growth.

Source: Bloomberg, IMF, Moffatt & Nichol

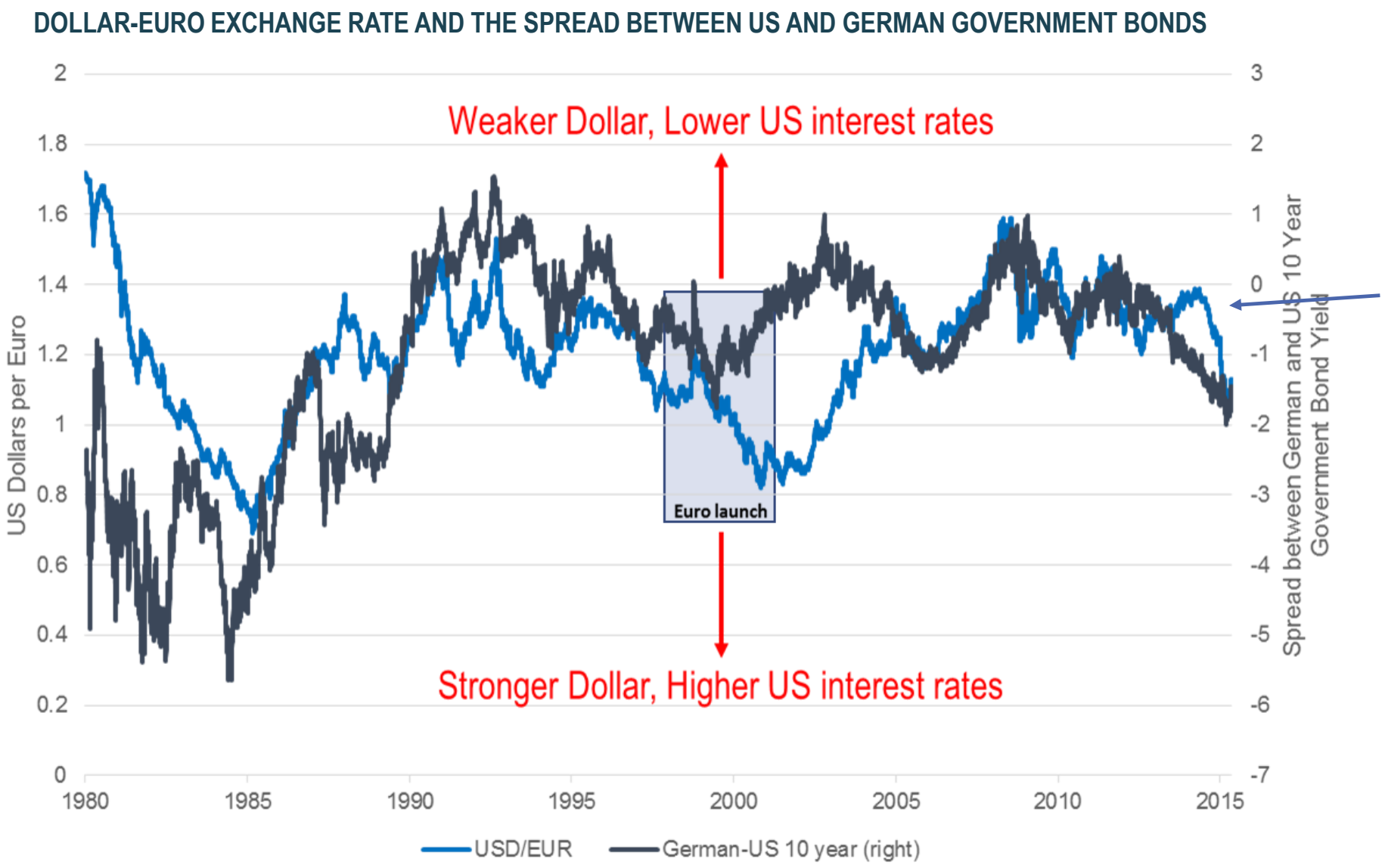
A virtuous cycle of US employment and consumer spending

EMPLOYMENT AND RETAIL SALES VOLUMES



Source: Bureau of Labor Statistics, National Bureau for Economic Research, Moffatt & Nichol

US Dollar is cyclically strong but structurally weak

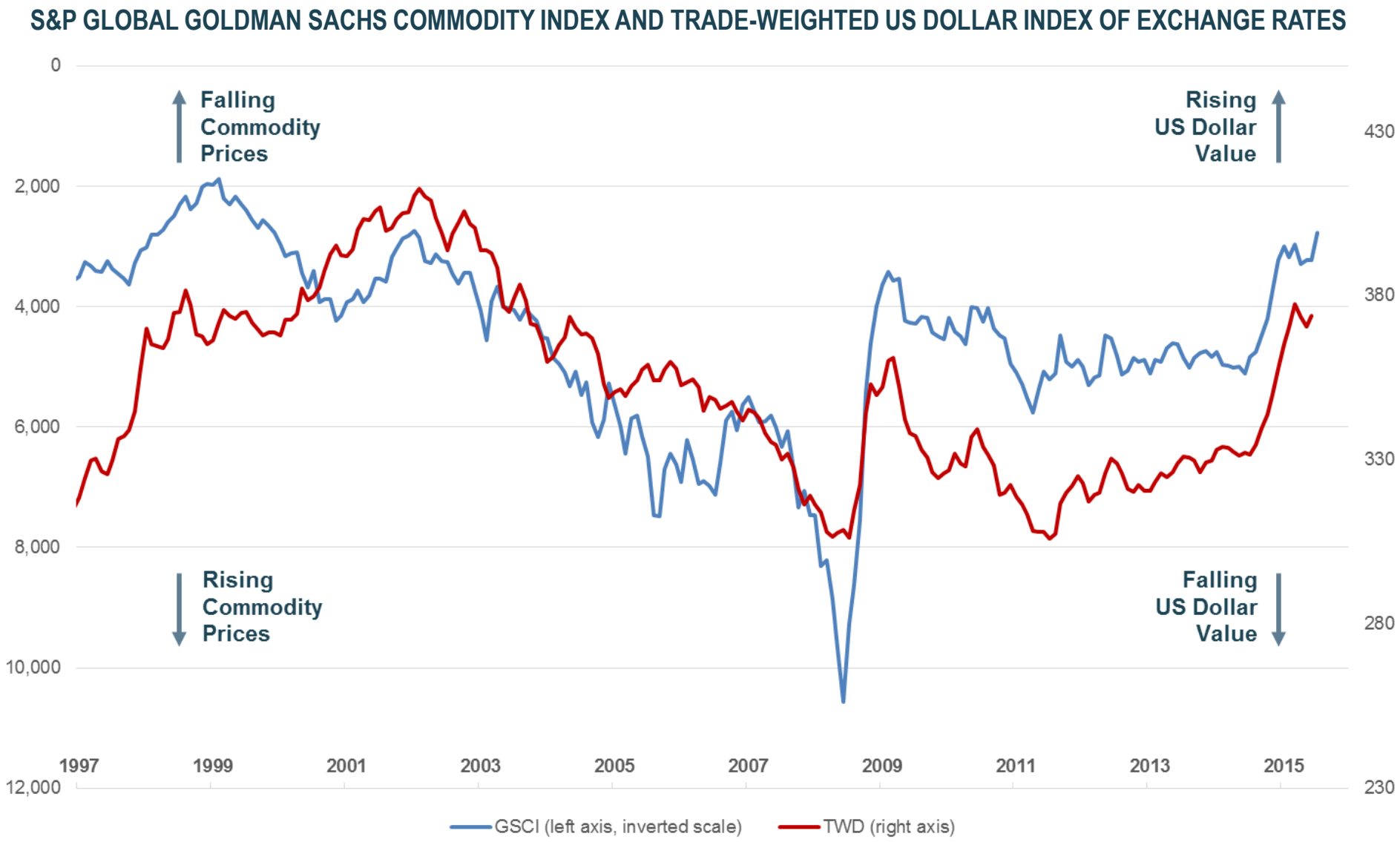


Generally speaking, a country's currency gains value in foreign exchange markets when its economy is getting stronger and this is reflected in rising interest rates.

Financial markets under-valued the US Dollar relative to the Euro throughout most of 2014.

Source: Trading Economics, Moffatt & Nichol

Stronger USD is correlated with lower commodity prices



Source: Bloomberg, Federal Reserve, Moffatt & Nichol

Agricultural prices declined less than for other commodities

ABSOLUTE AND RELATIVE PERCENTAGE CHANGE OF COMMODITY PRICES AND COMMODITY PRICE INDEXES

Key Indexes	Actual	Date	Yearly	Relative to GSCI
Baltic Dry	363	19-Jan	-52%	-23%
CRB Index	159.99	19-Jan	-29%	0%
GSCI Index	279	18-Jan	-29%	0%
LME Index	2085.1	19-Jan	-24%	4%

Energy	Actual	Date	Yearly	Relative to GSCI
Crude oil	26.78	20-Jan	-42%	-13%
Brent crude oil	27.84	21-Jan	-41%	-13%
Natural gas	2.163	21-Jan	-26%	2%
Gasoline	1.034	21-Jan	-20%	9%
Heating oil	0.8764	21-Jan	-47%	-18%
Ethanol	1.37	21-Jan	-4%	25%

Metals	Actual	Date	Yearly	Relative to GSCI
Gold	1100.51	20-Jan	-15%	14%
Silver	14.15	20-Jan	-21%	8%
Platinum	821	21-Jan	-36%	-7%
Palladium	497.23	21-Jan	-36%	-7%

Industrial Metals	Actual	Date	Yearly	Relative to GSCI
Copper	1.97	21-Jan	-25%	4%
Iron Ore	42.1	19-Jan	-38%	-9%
Lead	1634.5	19-Jan	-14%	15%
Molybdenum	11650	19-Jan	-45%	-17%
Nickel	8563	19-Jan	-42%	-13%
Aluminum	1470	20-Jan	-21%	7%
Tin	13380	20-Jan	-31%	-2%
Zinc	1482.5	20-Jan	-31%	-2%
Coal	48.85	19-Jan	-20%	8%
Cobalt	23750	19-Jan	-23%	6%
Steel	210	19-Jan	-57%	-28%

Industrial Agriculture	Actual	Date	Yearly	Relative to GSCI
Cotton	61.83	21-Jan	8%	36%
Rubber	156.6	21-Jan	-19%	10%
Lumber	238.4	20-Jan	-24%	5%
Wool	1283	19-Jan	22%	50%

Consumer Agriculture	Actual	Date	Yearly	Relative to GSCI
Corn	369	21-Jan	0%	28%
Soybeans	875.5	21-Jan	-10%	19%
Wheat	471.5	21-Jan	-13%	16%
Rice	10.85	21-Jan	-5%	24%
Canola	484.8	21-Jan	8%	36%
Cocoa	2810	20-Jan	-6%	23%
Orange Juice	120.05	20-Jan	-18%	11%
Coffee	112.2	20-Jan	-32%	-3%
Oat	201.25	21-Jan	-38%	-9%
Sugar	14.19	20-Jan	-9%	20%

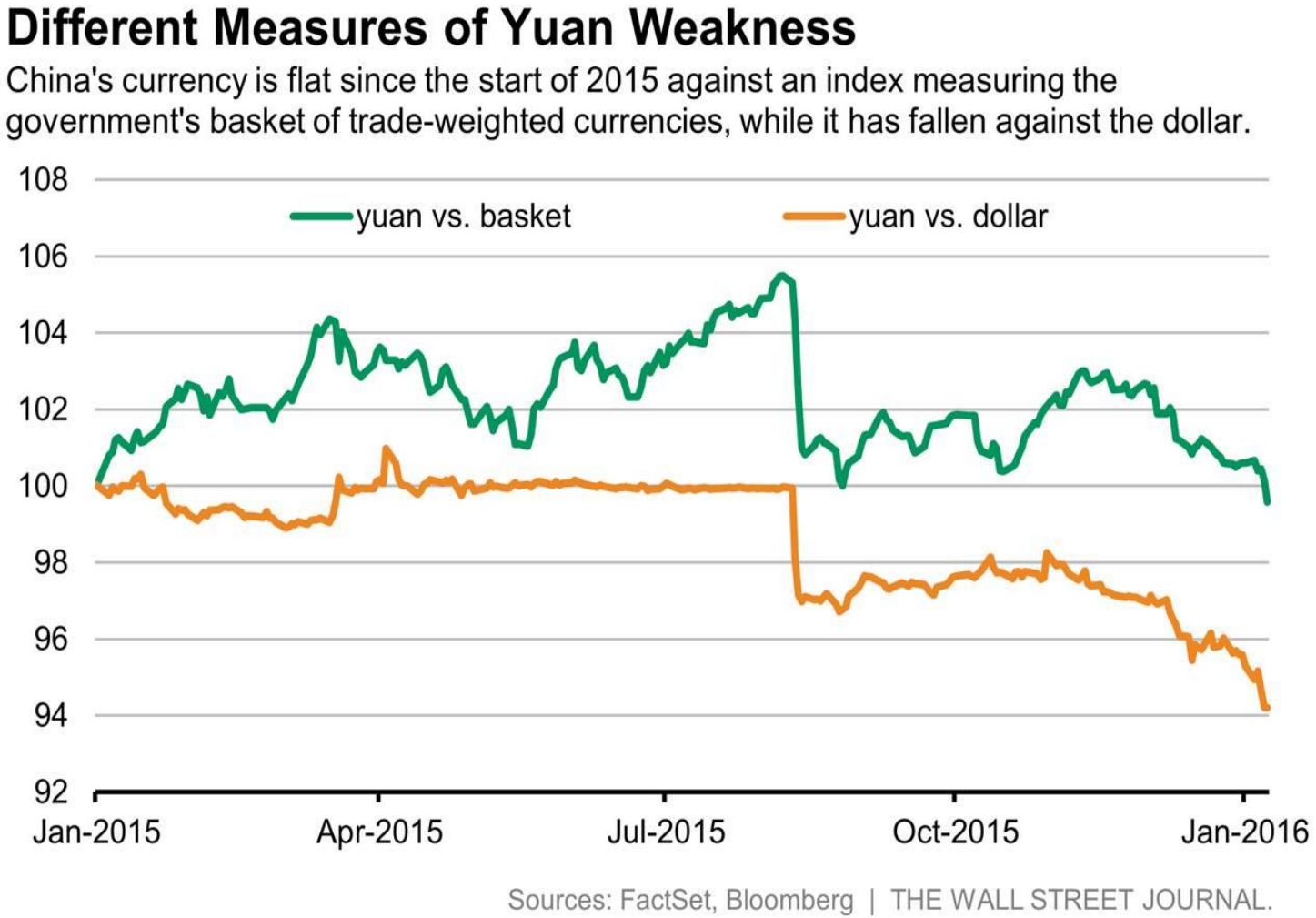
Livestock	Actual	Date	Yearly	Relative to GSCI
Feeder Cattle	148.1	21-Jan	-28%	1%
Live Cattle	128.52	20-Jan	-16%	13%
Lean Hogs	67.25	21-Jan	-9%	19%
Beef	10.25	19-Jan	13%	42%

Commodity prices are quoted and traded in US Dollars. In the last 12 months the US Dollar has appreciated against virtually every currency in the world. It is not surprising that commodity prices have declined.

Commodities that have suffered the largest decline in prices were energy and metals. With a few exceptions agricultural commodity prices did not decline as much as energy and industrial commodities' prices did. **Some agricultural commodity prices have actually risen over the last 12 months.**

Source: Trading Economics, Moffatt & Nichol

China is changing its foreign exchange policy



In the last 12 months the US Dollar has appreciated against virtually other currencies except those that are pegged to it. China's share of US imports has declined as its currency has appreciated against that of other countries because the Renminbi was pegged to the strengthening US Dollar.

In 2015 China said it was focusing on a new currency basket index. This was largely ignored because in the past, when China mentioned linking its currency to a basket, it did not follow through. Likely because the Dollar was depreciating against the currencies of China's competitors.

According to the Wall Street Journal, last December on a Friday evening an editorial was posted on the People Bank of China's website, indicating in vague language that it was tracking the yuan against a basket of trading partners' currencies and against the US Dollar.

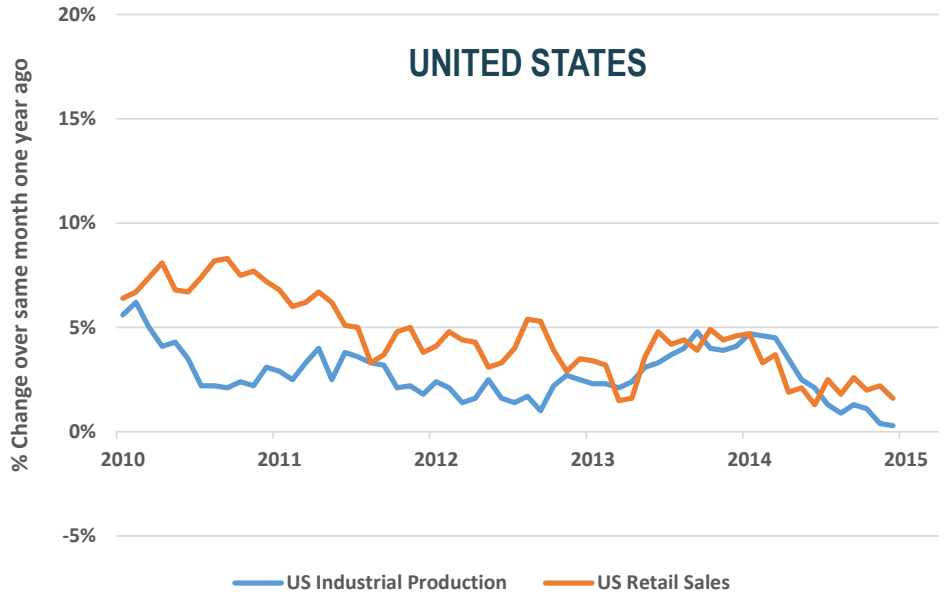
It is likely that China is being vague because if it follows such a formula, currency traders could try to test the PBOC's ability to do so, which would reduce its ability to support the economy.

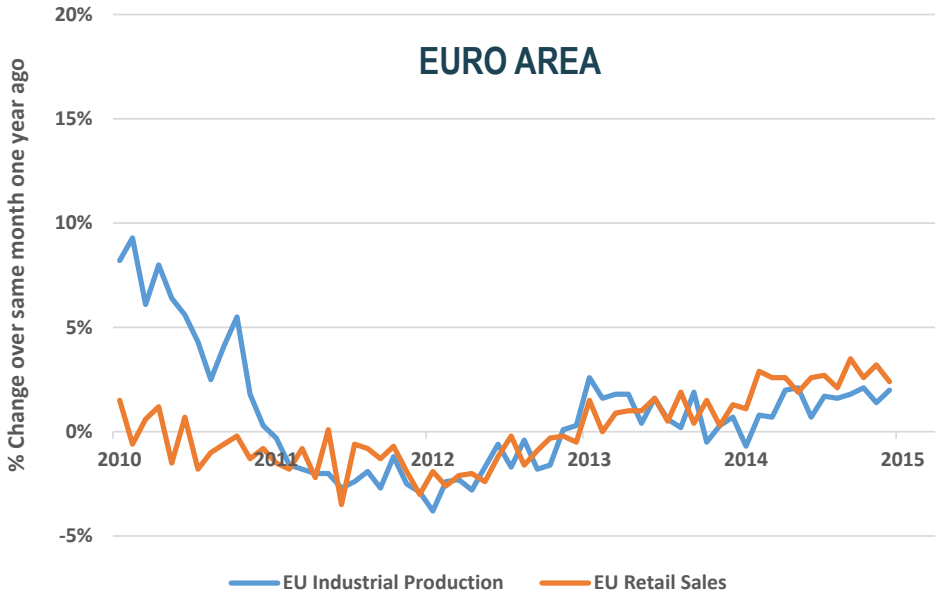
Most commodities are priced and traded in US Dollar. Therefore the US Dollar- Chinese Renminbi exchange rate still matters because China is a major commodity importer.

Better explained intentions might reduce increases in market volatility that seem to occur every time the yuan weakens against the dollar.

Source: Wall Street Journal

Global economy is currently driven by consumers





Retail sales growth data is not adjusted for inflation and includes spending on gasoline. Declines in gasoline prices will lower retail sales spending growth rates

Consumer spending is holding up better than industrial production in all three major economies

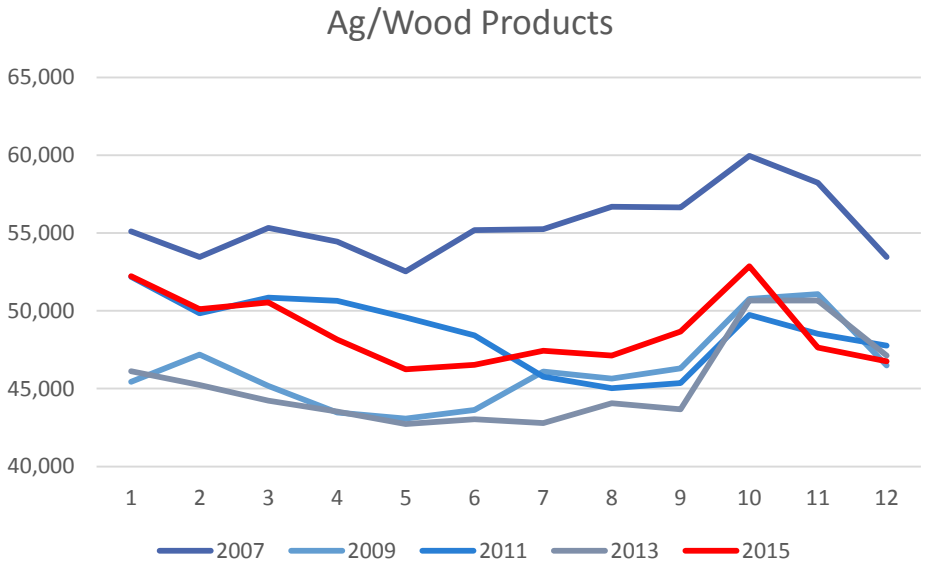
Countries that use the Euro as their currency stopped dragging on world economic growth at the end of 2014

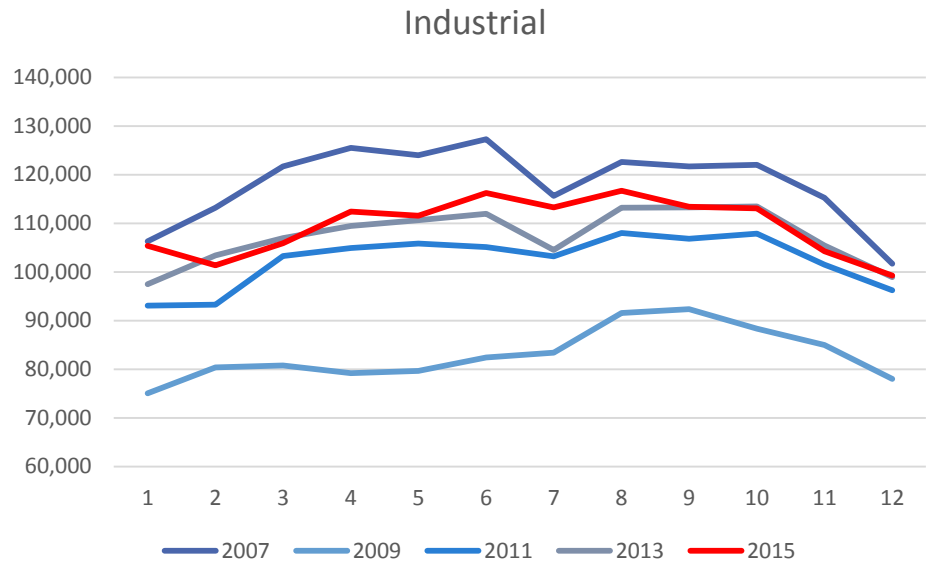
US industrial production is impacted more negatively by declining energy and mining activity than in the Euro Area and China

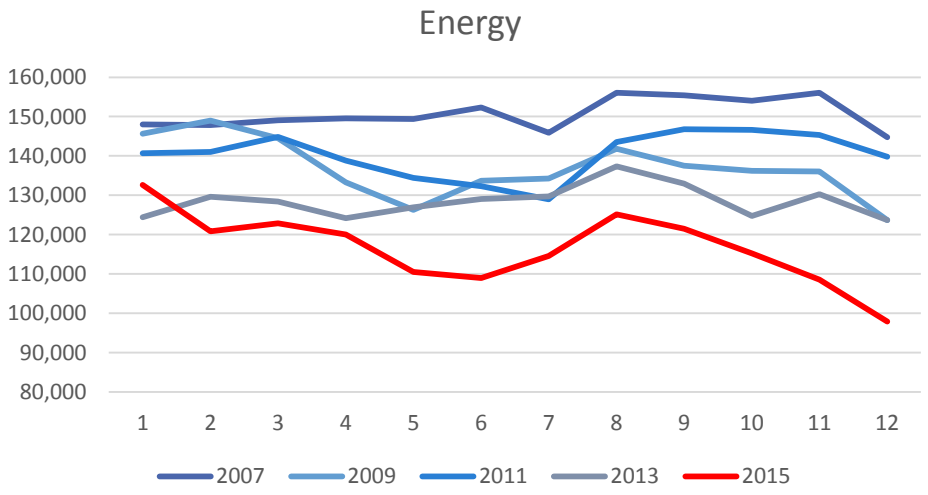
Source: Trading Economics, Moffatt & Nichol

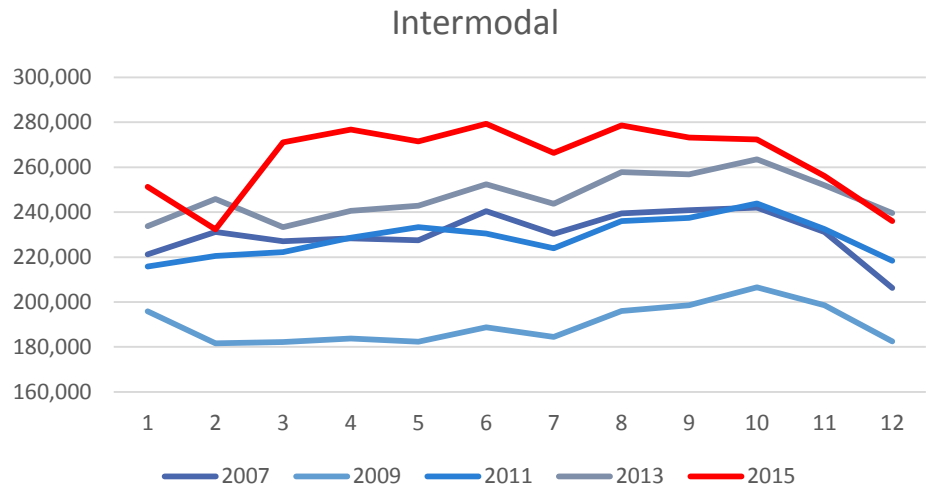
Rail volumes mostly supported by consumer spending

MONTHLY RAIL CARLOADS BY TYPE OF FREIGHT









Source: AAR, Moffatt & Nichol

US international trade in goods

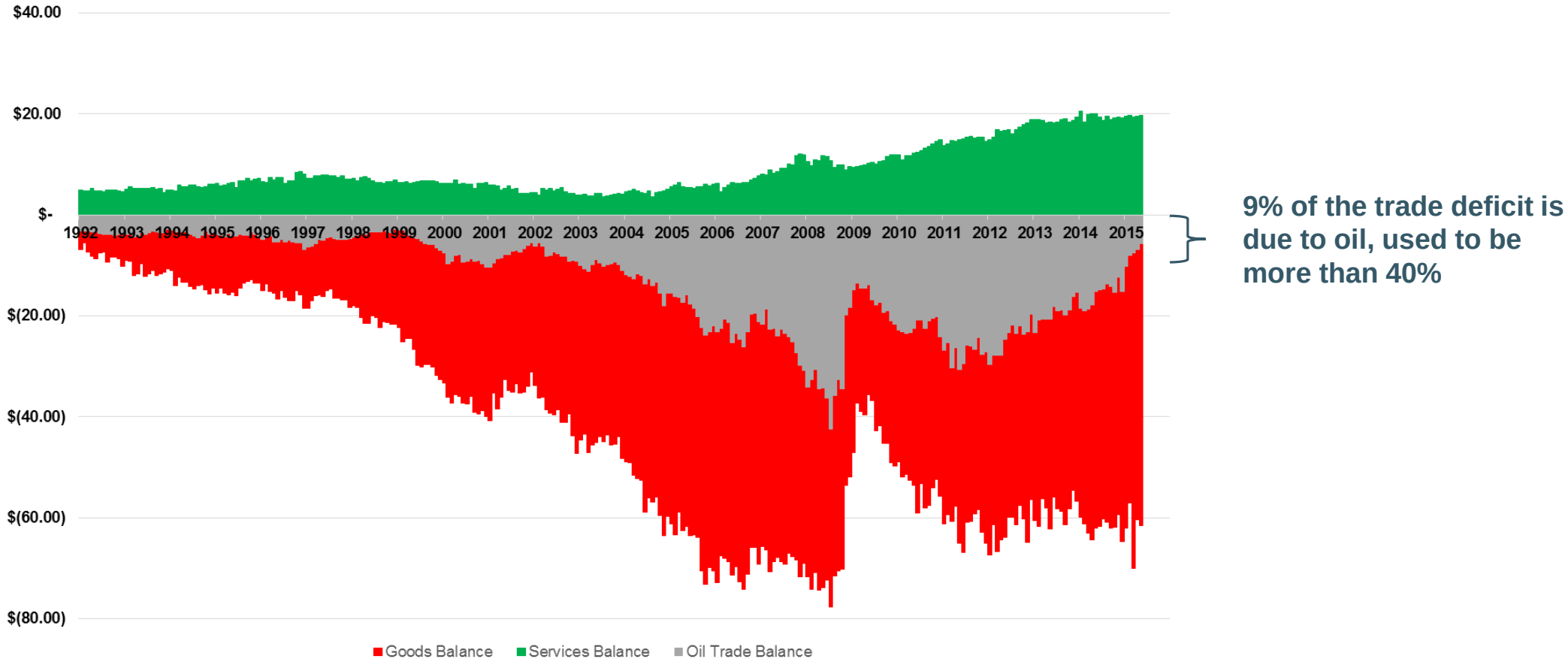
ANNUAL GROWTH RATE OF THE VOLUME OF US IMPORTS AND EXPORTS OF GOODS

Between 2011 and 2014, US exports grew faster than imports. Imports are likely to grow faster than exports from 2015 to 2018.

Source: BEA, Moffatt & Nichol

US Trade deficit remains high despite improving oil trade

US TRADE DEFICIT



9% of the trade deficit is due to oil, used to be more than 40%

The US has helped the world economy develop, particularly emerging market economies, by allowing its trade balance to be in deficit. This isn't sustainable in the long run. Reducing the trade deficit is important for employment and therefore economic growth. The decreasing US oil trade deficit has directly helped strengthen our goods balance and in the process helped US employment recover from the deep 2007-2009 recession. Reversal of oil export ban will also help. But more, a further reduction in the deficit, is needed.

Source: US Census Bureau, Moffatt & Nichol

What can the US can competitively export?

TOP 10 HIGH POTENTIAL US NET EXPORTS

Containerized	Score
Wood Pulp Scrap and Waste	9.4
Oil Seeds (Soy)	1.1
Raw Hides And Leather	0.8
Cotton - Untreated, Yarn And Woven Fabric	0.7
Animal Feed	0.7
Meat and Other Edible Animal Parts	0.3
Plastics Feedstock and Manufactured Goods	0.2
Iron And Steel	0.1
Paper and Paperboard	0.1
Chemical Products	0.1
Cereals	0.1
Organic Chemicals	0.1

Bulk/Breakbulk	Score
Oil Seeds (Soy)	32.7
Meat and Other Edible Animal Parts	28.7
Cereal Grains	3.9
Animal Feed	3.4
Wood And Charcoal	0.4
Crude Oil and Refined Petroleum/Natural Gas Products	0.4
Live Animals	0.3
Wood Pulp Scrap and Waste	0.2
Fish and Crustaceans	0.2
Dairy Products, including Eggs and Honey	0.1
Organic Chemicals	0.1
Plastics Feedstock and Manufactured Goods	0.1

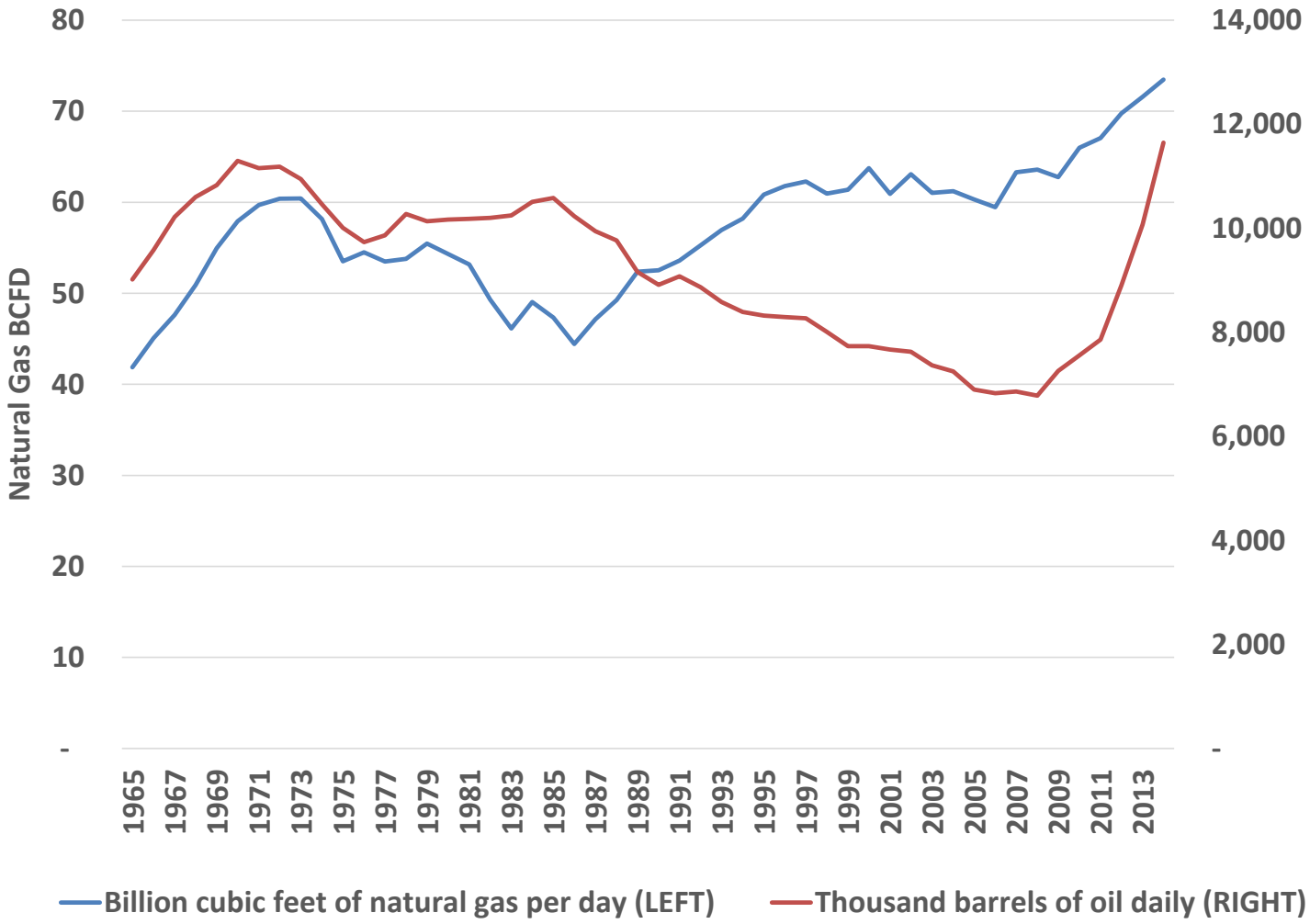
[1] *Based on relative comparative advantage as defined by Bela Belassi*

Agriculture, Capital goods and 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 (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.

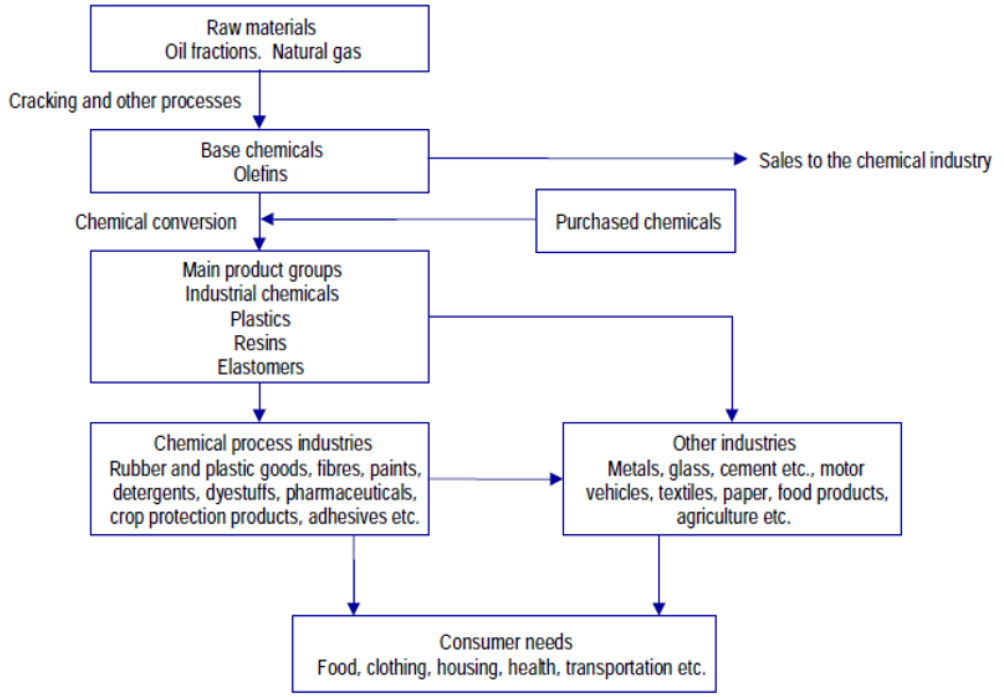
Source: US Census Bureau, Moffatt & Nichol

US oil and gas production exceeds previous peak levels

PETROLEUM AND NATURAL GAS PRODUCTION: 1965 – 2014



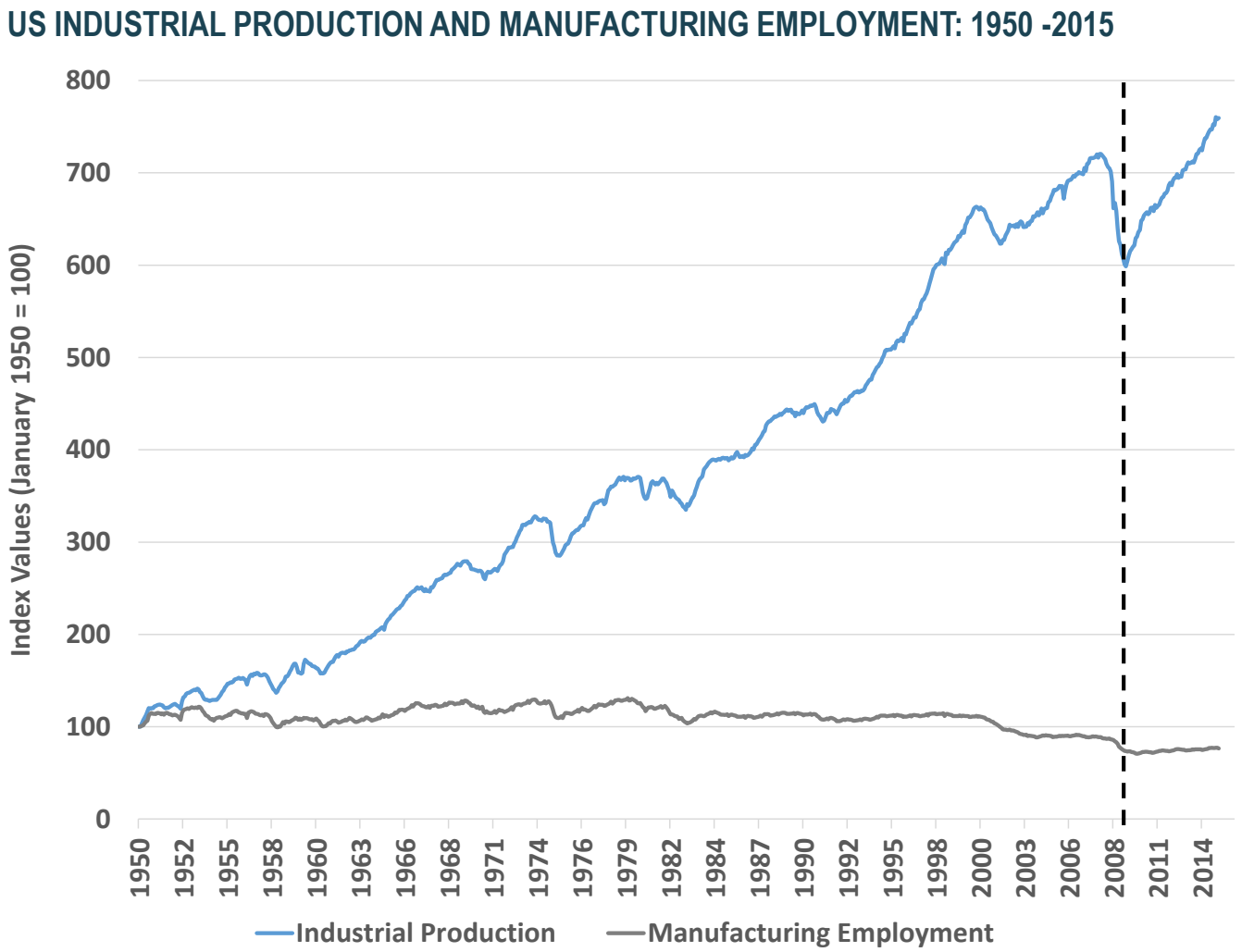
PETROCHEMICAL PROCESSES AND PRODUCTS



Hydrocarbons and metals are the feedstock of modern industrialized economies

Source: British Petroleum, Moffatt & Nichol

US manufacturing is growing but using less labor

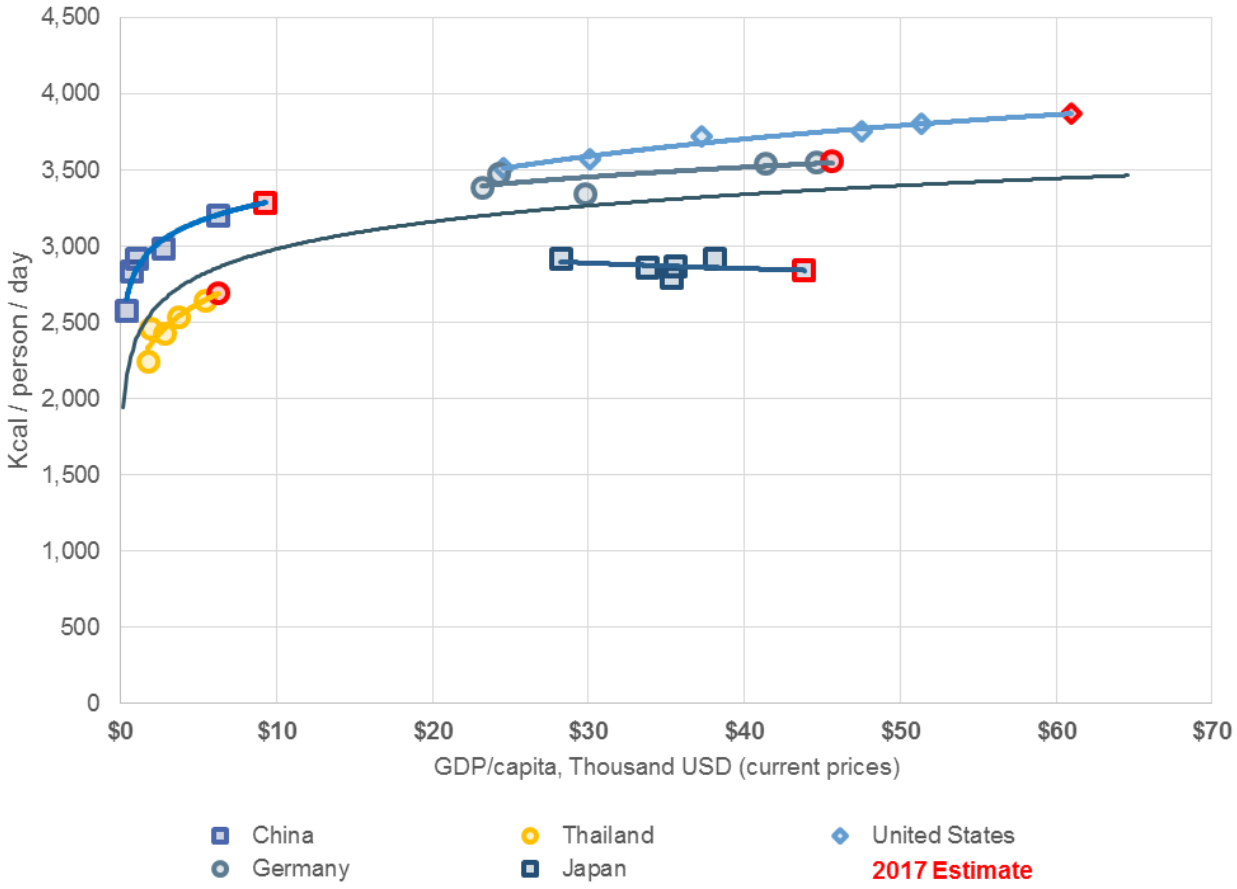


US manufacturing output is almost 8x the level of 1950 while employment is 25% lower. This is due to the changing nature of the commodities manufactured in the US (higher technology content) and automation. Using a minimum of relatively expensive US labor allows capital goods to be cost competitive.

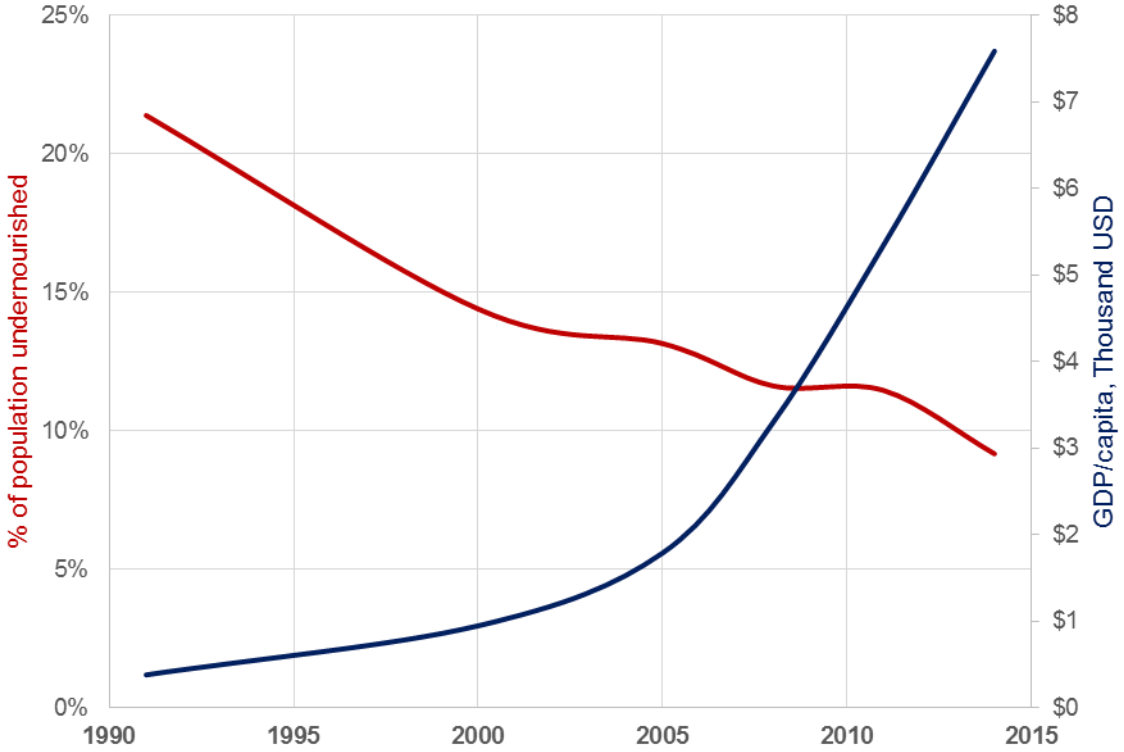
Source: Federal Reserve, Labor Department, Moffatt & Nichol

China's increasing food consumption ahead of GDP growth

FOOD CONSUMPTION VS GDP/CAPITA, 1990-2012



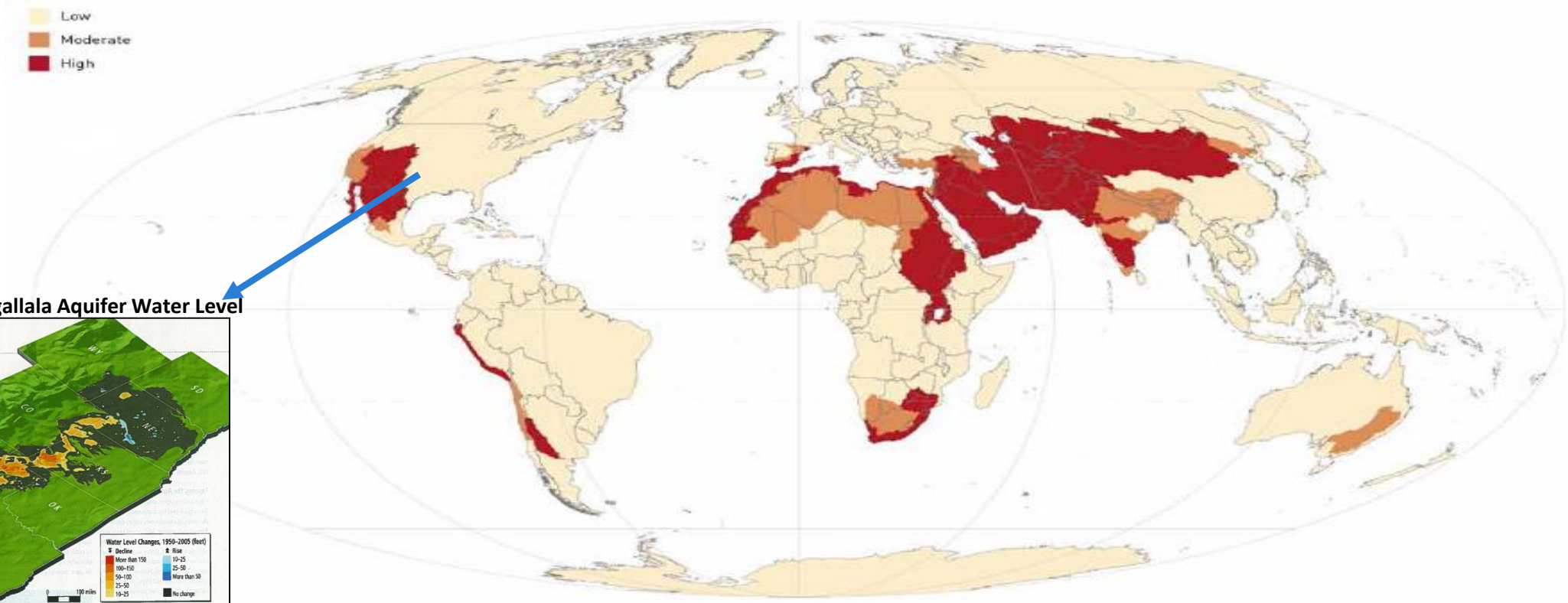
PERCENT OF CHINA'S POPULATION UNDERNOURISHED



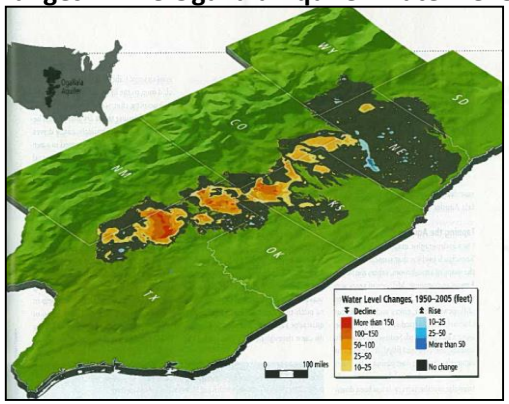
Source: FAO, IMF WEO, Moffatt & Nichol

Water is the overlooked looming resource crisis

GLOBAL DISTRIBUTION OF PHYSICAL WATER SCARCITY



Changes In The Ogallala Aquifer Water Level

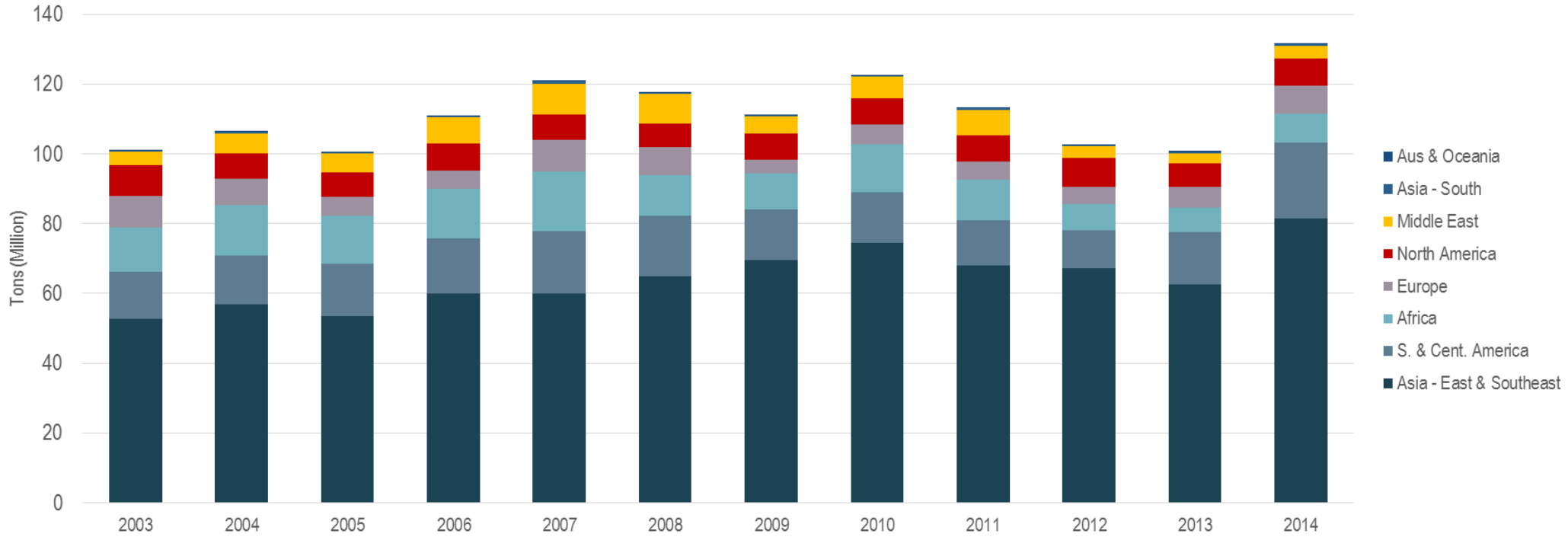


Water is becoming increasingly scarce in Asia, the Middle East and in the Western half of the US. The Americas otherwise have abundant water and are likely to grow in importance as the world's breadbasket.

Source: UN-FAO, US Government Agencies

Asia is the dominant destination of US grains and oilseeds

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

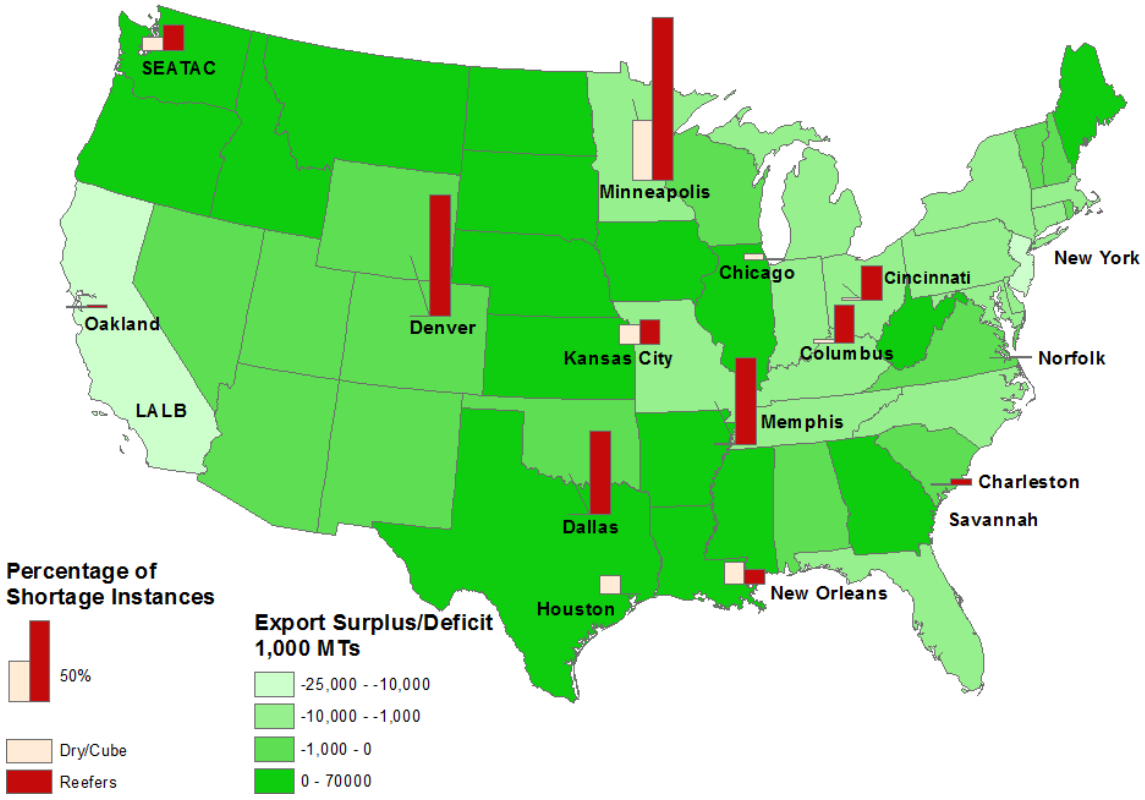


	2003	2005	2007	2009	2011	2013	2014	+/- Share
Asia - East & Southeast	52%	53%	50%	63%	60%	62%	62%	10%
China	11%	10%	10%	21%	21%	34%	30%	19%
South & Central America	14%	15%	15%	13%	11%	15%	17%	3%
Africa	13%	14%	14%	9%	11%	7%	6%	-6%
Europe	9%	5%	7%	4%	4%	6%	6%	-3%
North America	9%	7%	6%	7%	7%	7%	6%	-3%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

Empty container availability is very poor in less urban areas

CONTAINER SHORTAGE INCIDENCE BY CITY



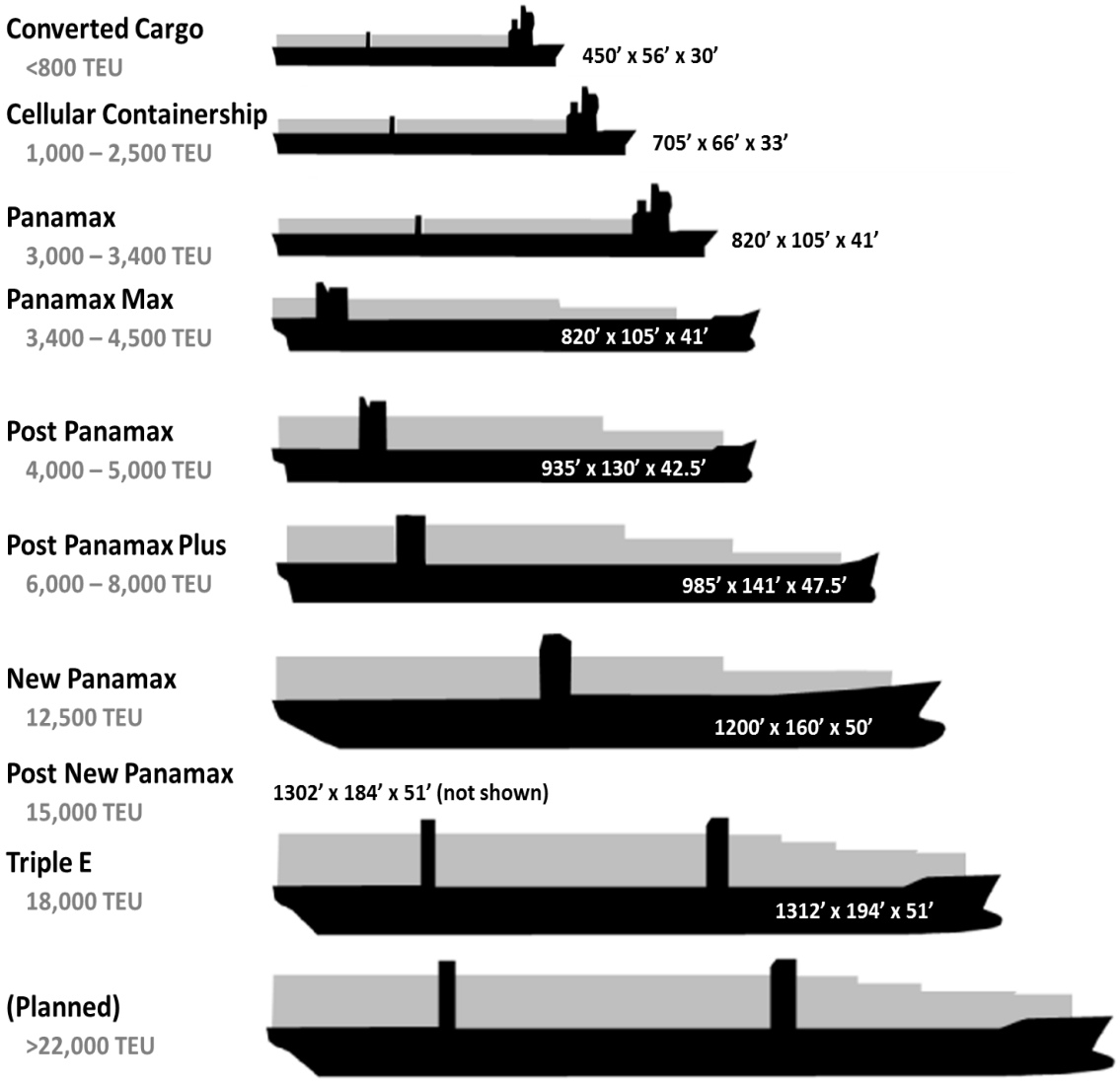
		Dry				Reefer		
		20ft	40ft	40ft High	Average	20ft	Average	Average
East	New York	0%	0%	0%	0%	0%	0%	0%
	Norfolk	0%	0%	0%	0%	0%	2%	1%
	Charleston	2%	0%	0%	1%	4%	4%	4%
	Savannah	0%	0%	0%	0%	0%	0%	0%
North Central	Minneapolis	44%	44%	17%	35%	100%	92%	96%
	Chicago	0%	10%	2%	4%	0%	2%	1%
	Cincinnati	0%	2%	4%	2%	2%	42%	22%
	Columbus	2%	2%	0%	1%	10%	31%	20%
	Kansas City	2%	19%	13%	12%	0%	29%	14%
South Central	Memphis	2%	0%	0%	1%	8%	94%	51%
	New Orleans	4%	23%	12%	13%	0%	17%	9%
	Dallas	0%	0%	0%	0%	0%	98%	49%
	Houston	2%	29%	0%	10%	0%	0%	0%
	Denver	0%	0%	0%	0%	44%	98%	71%
West	LALB	0%	0%	0%	0%	0%	0%	0%
	Oakland	0%	0%	2%	1%	0%	2%	1%
	Seattle	4%	0%	17%	7%	0%	0%	0%
	Tacoma	0%	6%	19%	8%	48%	12%	30%

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. Less congestion in port gateways could improve container availability in the Midwest.

Source: US Department of Agriculture, Moffatt & Nichol

Ships continue to get larger – Need deeper depth and air draft

EVOLUTION OF CONTAINERSHIP SIZE



SHARE OF FLEET CAPACITY

2012	2015
88%	78%
12%	22%

What will this share be by 2020?

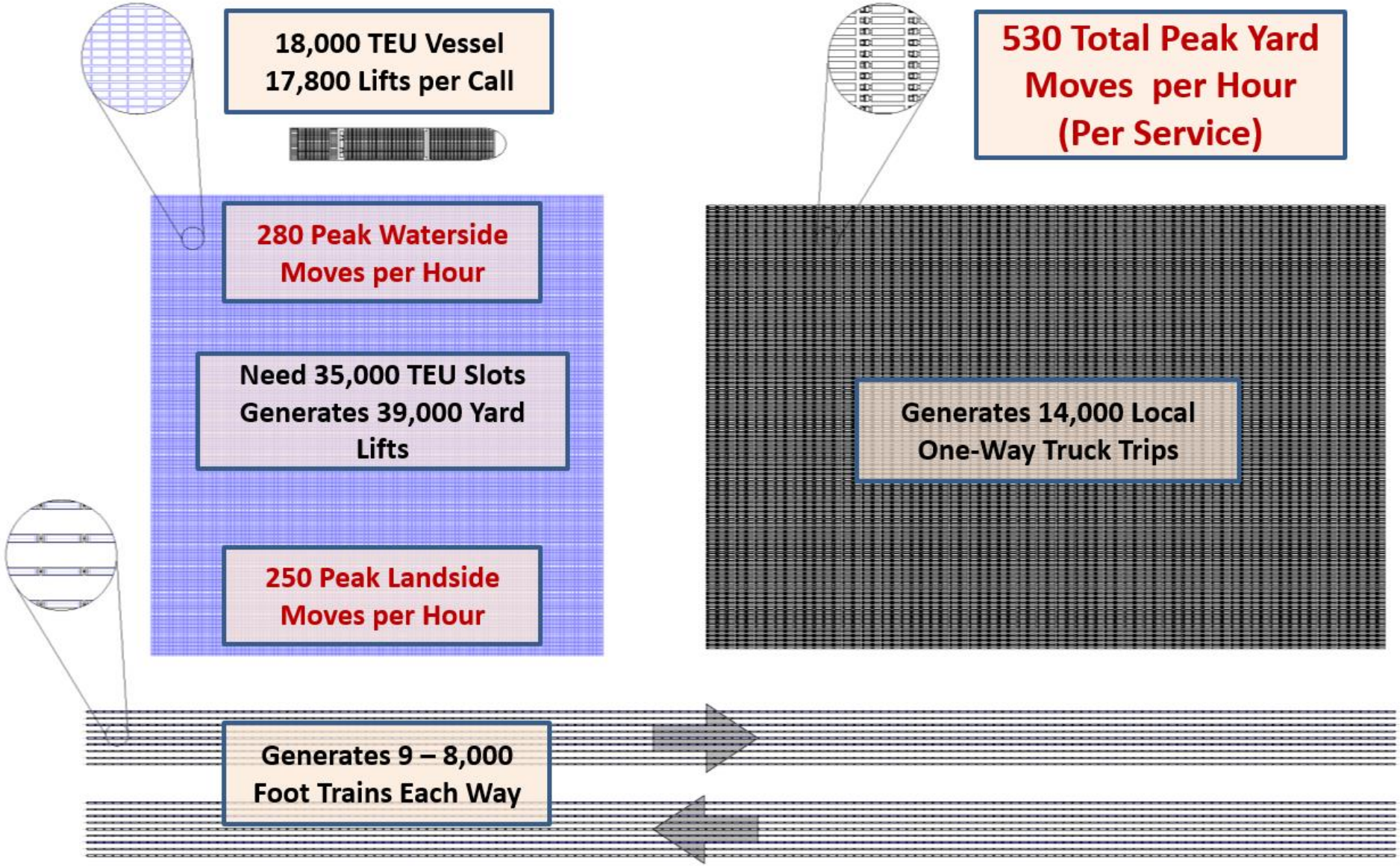
VESSEL SHARING ALLIANCES (EAST-WEST)

G6	CKYHE
~~APL~~	Cosco Container Lines
Hapag-Lloyd	K Line
Hyundai Merchant Marine	Yang Ming Marine Transport Co.
Mitsui OSK Lines	Hanjin Shipping Co.
NYK Line	Evergreen
OOCL	

O3	2M
CMA GGM	Maersk
China Shipping Container Lines	MSC
UASC	
Hamburg-Sud?	

Source: Alphaliner, Panama Canal Authority, Moffatt & Nichol

Workload and traffic generation for an 18K TEU service



Congestion is a global problem that needs local solutions

TRUCK TRAFFIC IN ROTTERDAM

PORT TRAFFIC IN SOUTHERN CALIFORNIA

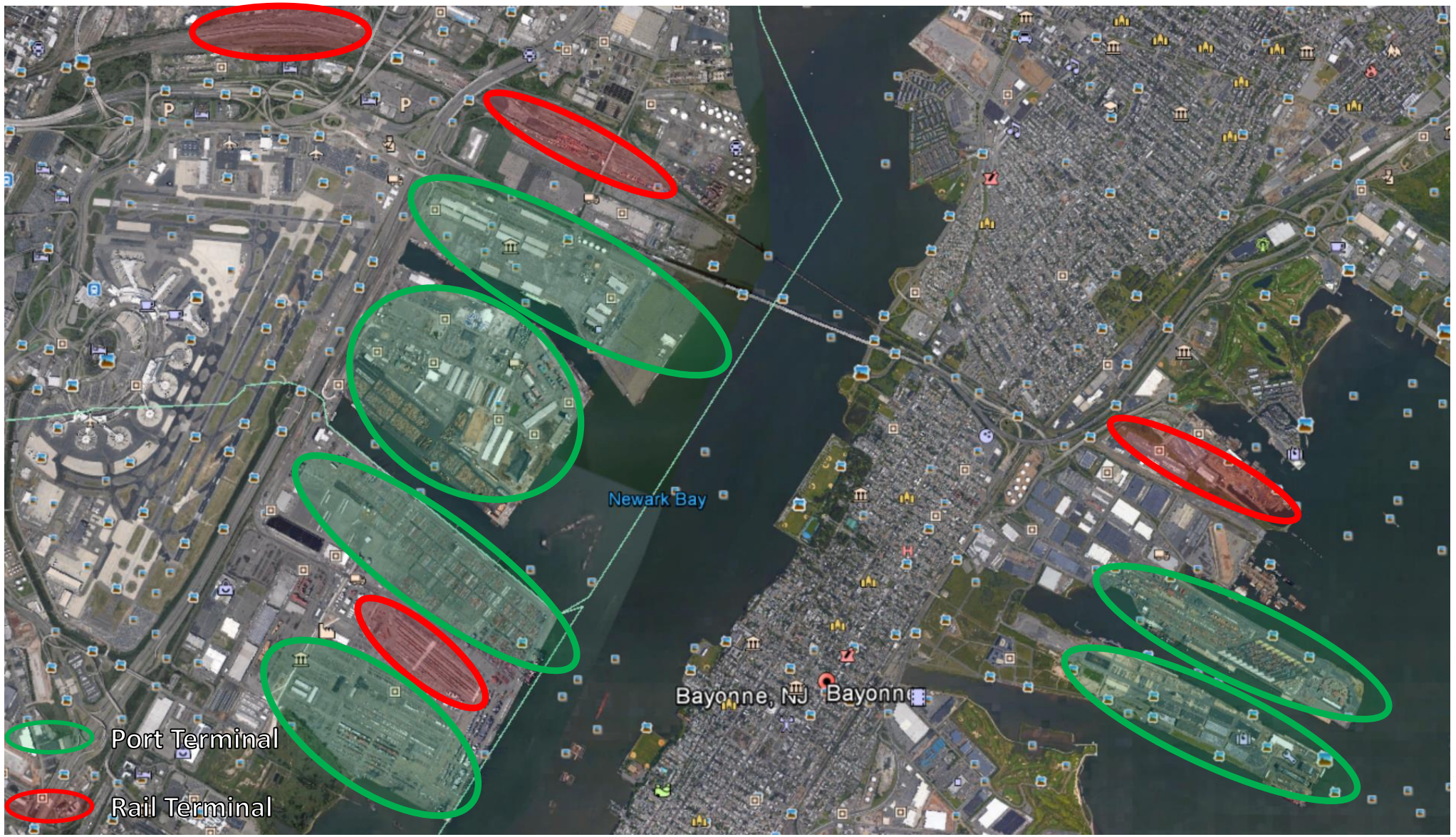
PORT OF SHANGHAI, CHINA

US problems are compounded in some areas due to chassis supply and changing industry practices

Highly recommended to read

Intermodal capacity is needed to reduce congestion

PORT OF NEW YORK AND NEW JERSEY CONTAINER TERMINALS AND INLAND CONNECTIVITY INFRASTRUCTURE



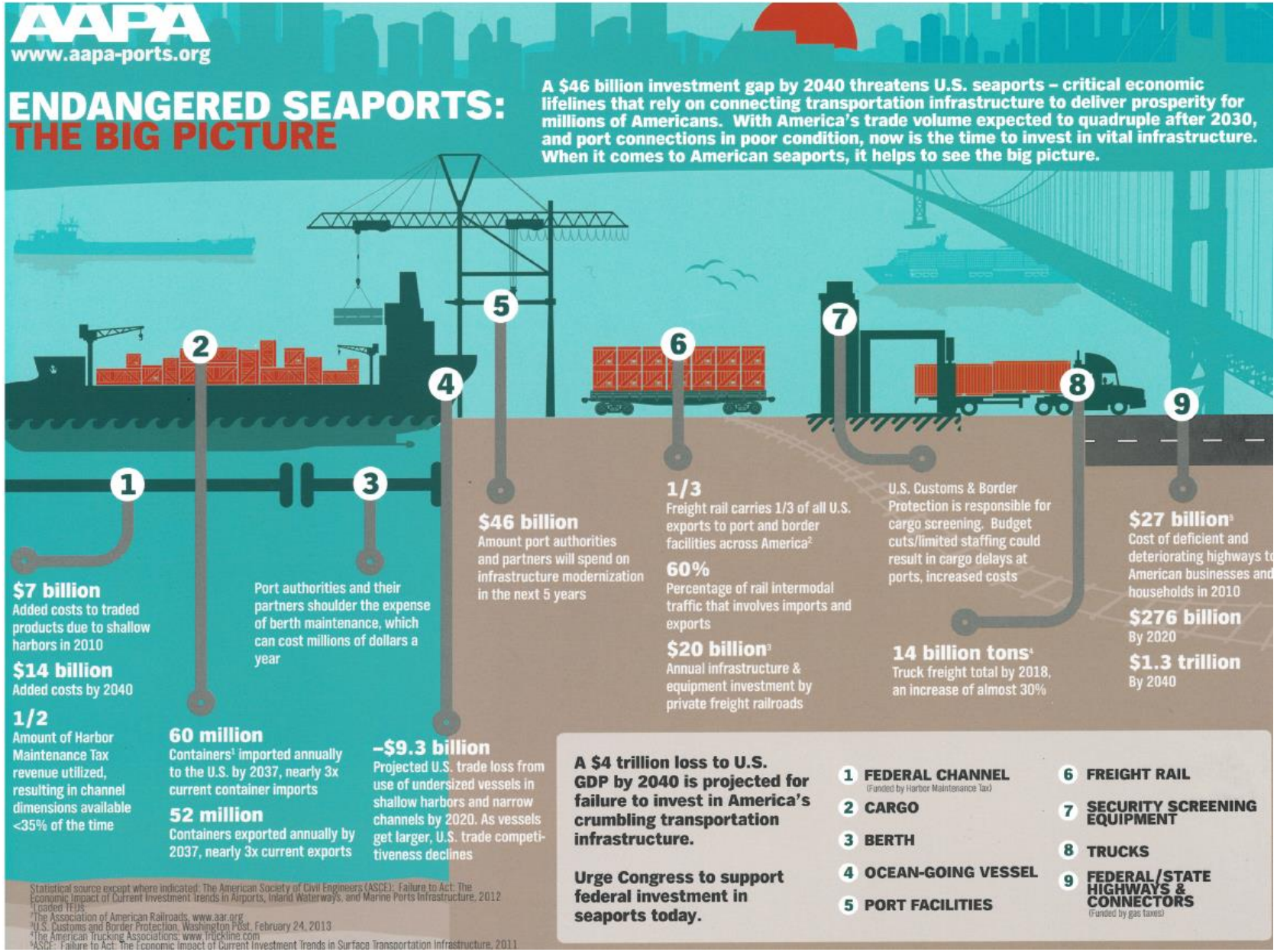
Expanded cost-benefit analysis of at-grade separations

- **Primary effect costs: Direct, indirect, and intangible costs associated with property damage, injury, and fatal crashes (more visible at the time of the crash)**
  - **Injury and Fatality cost**
  - **Highway vehicle damage**
  - **Rail Infrastructure Damage**
  - **Rail Equipment Damage**
  - **HazMat release cost**

- **Secondary effect costs: Costs accrued to delayed travelers and cargo, and to parties beyond the immediate road and rail travelers and service operators (less visible at the time of the crash)**
  - **Delay and Rerouting Costs**
  - **Supply Chain Transport Costs**
  - **Supply Chain Inventory Cost**

Source: NC-DOT, Moffatt & Nichol

Ports are investing



At least $28.9 billion of $46 billion infrastructure investment gap needed by 2025 (AAPA)

HMT SPENDING TARGETS IN WRRDA

FY2015	67%
FY2016	69%
FY 2017	71%
FY 2018	74%
FY 2019	77%
FY 2020	80%
FY 2021	83%
FY 2022	87%
FY 2023	91%
FY 2024	95%
FY 2025+	100%

The economy is moving … but which way and how fast?

Transitioning to a more prosperous global economy characterized by a growing middle class

- More people, but older due to healthcare advances, and more urbanized
- Rising productivity (output per capita) from technological advances
- Improving resource recovery

Near term uncertainty due to structural factors

- Emerging markets not yet large or stable enough to offset slowing developed economies
- Growth of the physical stock of capital is characterized by booms and busts
- Technological advances are destroying jobs faster than creation of new ones
- Policy-maker (non-market force) reactions are less predictable

This is the right time to upgrade freight movement infrastructure

- Must keep pace with the changes in global trade logistics – both water and landside
- Interest rates are low and expected to rise only in the US in the near term
- Low input costs: commodities and labor

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