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# Survivors Guide For The Transportation Industry

AAPA 2013 Shifting International Trade Routes Workshop  
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Dr. Walter Kemmsies  
Chief Economist



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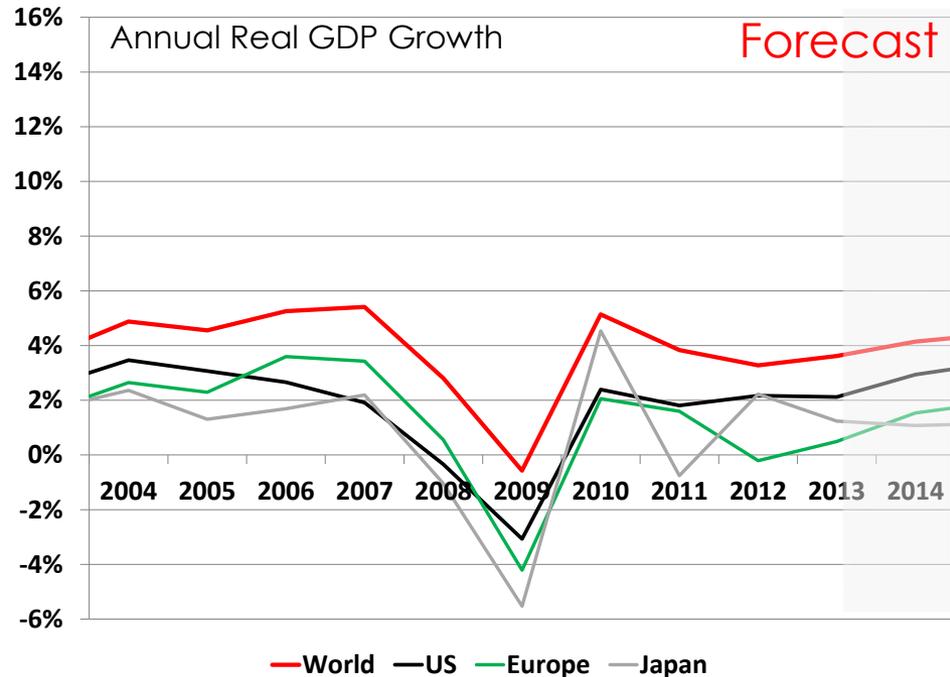
# Summary

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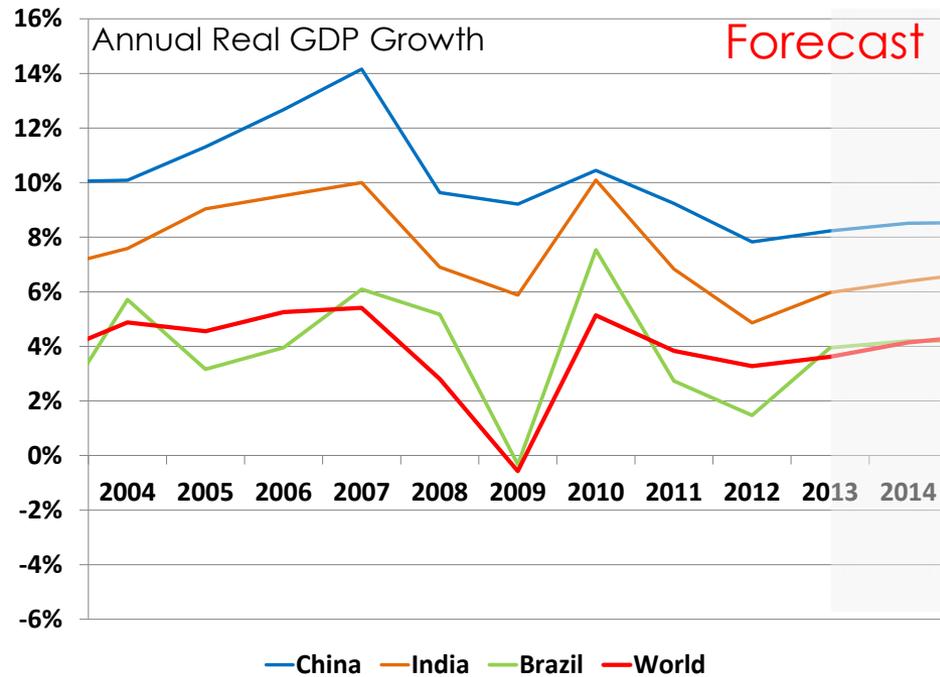
- **Near term: US and World economy gain steam**
  - Containers: 2013 growth of 6.5% with imports growing faster
  - Normal peak season
  - Spoilers: Fiscal policy brinksmanship, inflation worries
- **Medium term: slowdown in 2015 as the Fed withdraws the punchbowl**
  - Fed could start tightening as early as Q4 of 2013, if there are no more fiscal policy follies
- **Long term: US is still headed for stagflation**
  - Resource constraints will require developed economies to accommodate growing emerging market demand
  - US needs freight movement and energy infrastructure investment
  - **Not clear which way trends will pan out, long lead time indicators are needed**

# Emerging Markets Have Done Their Part

## Developed Economies Are Struggling...



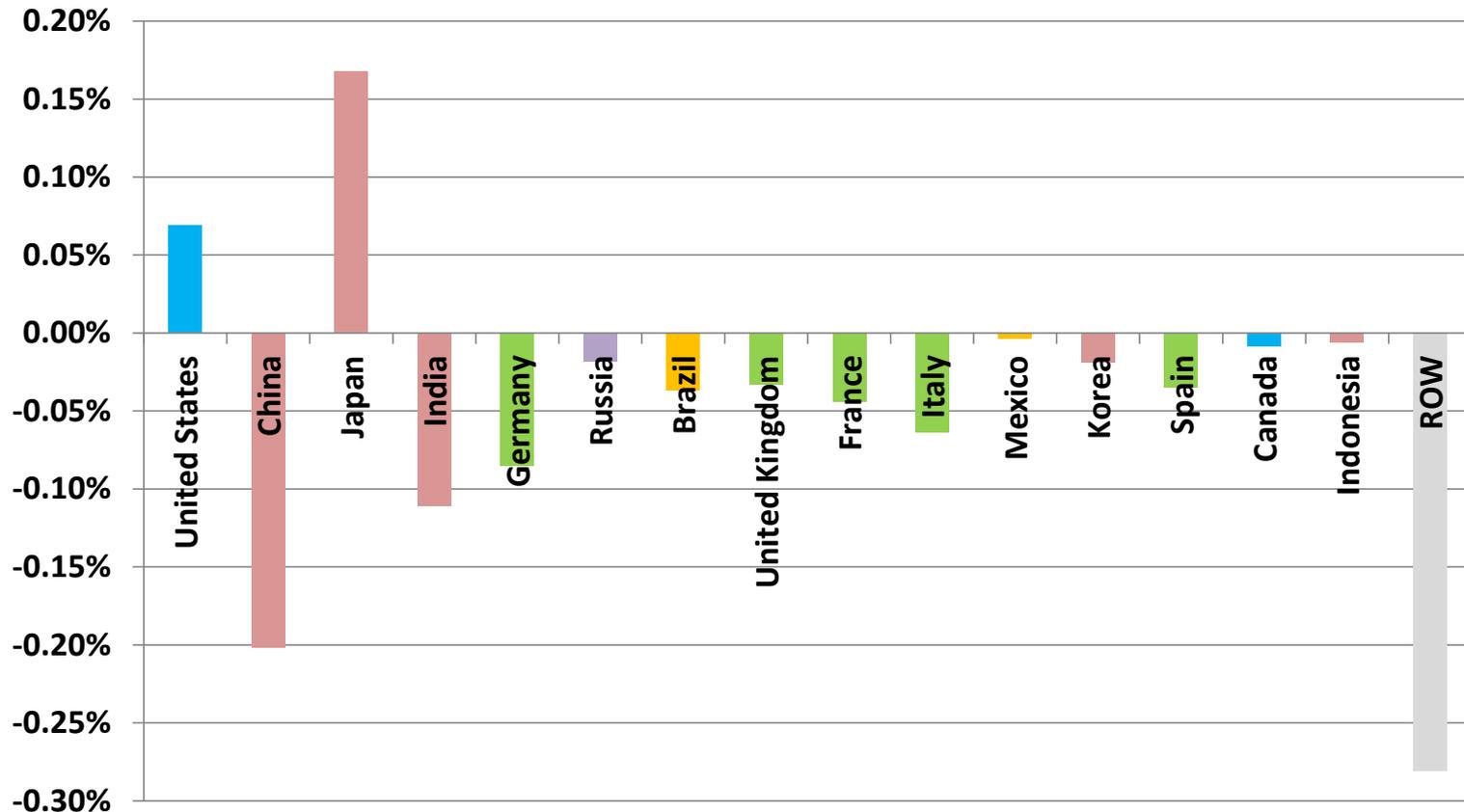
## ... Emerging Markets Are Losing Steam



- Emerging markets helped global economic recovery in 2009- 2010 by investing
- They were unable to sustain their support of global growth
  - Their growth is largely dependent on exports
  - 30% to 50% of the fastest growing markets' GDP is investment spending, global average is 20%
  - Commodity price spikes made them slow down to avoid inflation

# 2012: US Stepped Up Despite Fiscal Obstructions

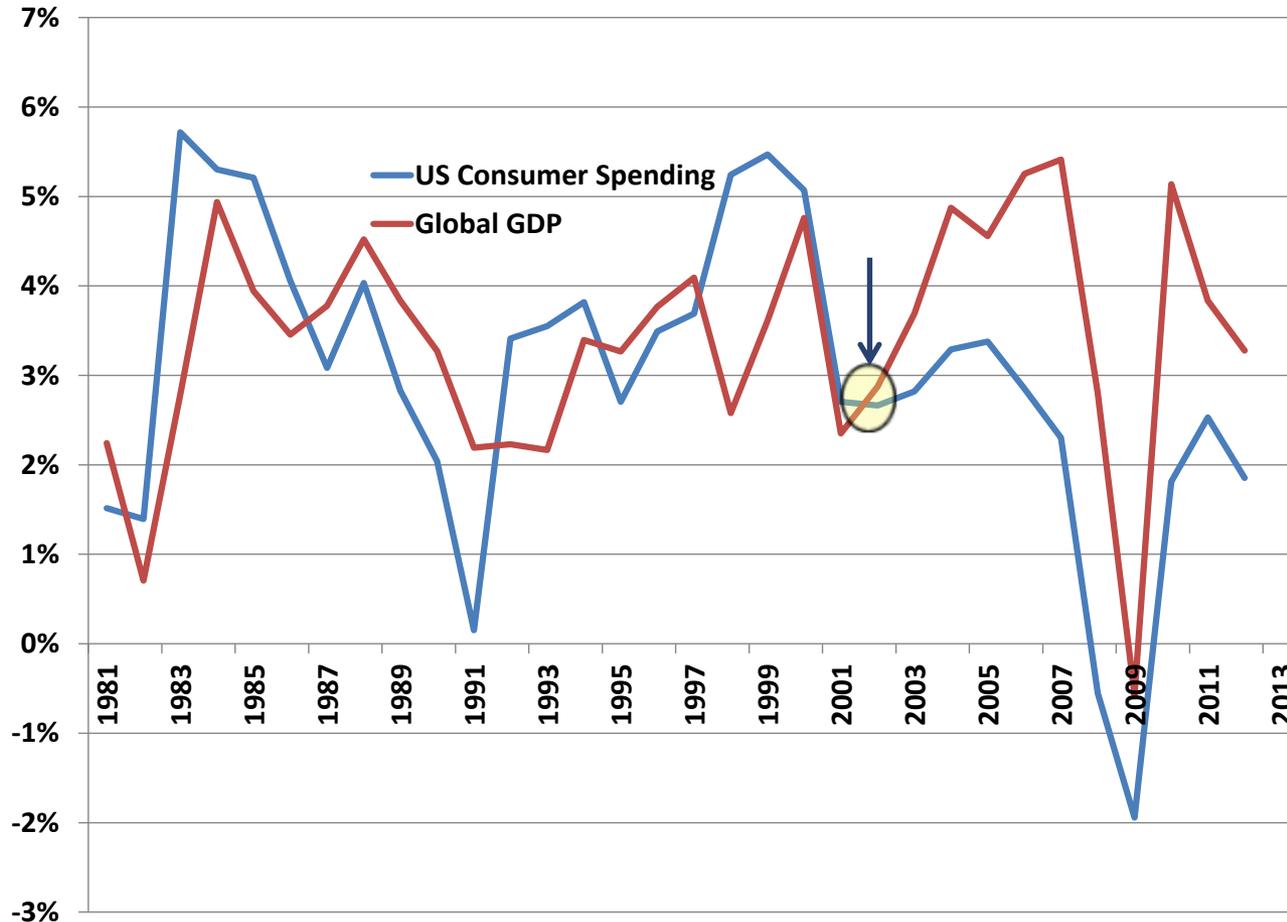
## Contributions to the Change In Global Real GDP Growth in 2012



- In 2012 the US led global economic growth in 2012 along with Japan as it recovered from the earthquake and tsunami in 2011

# World Economy Still Relies on The US

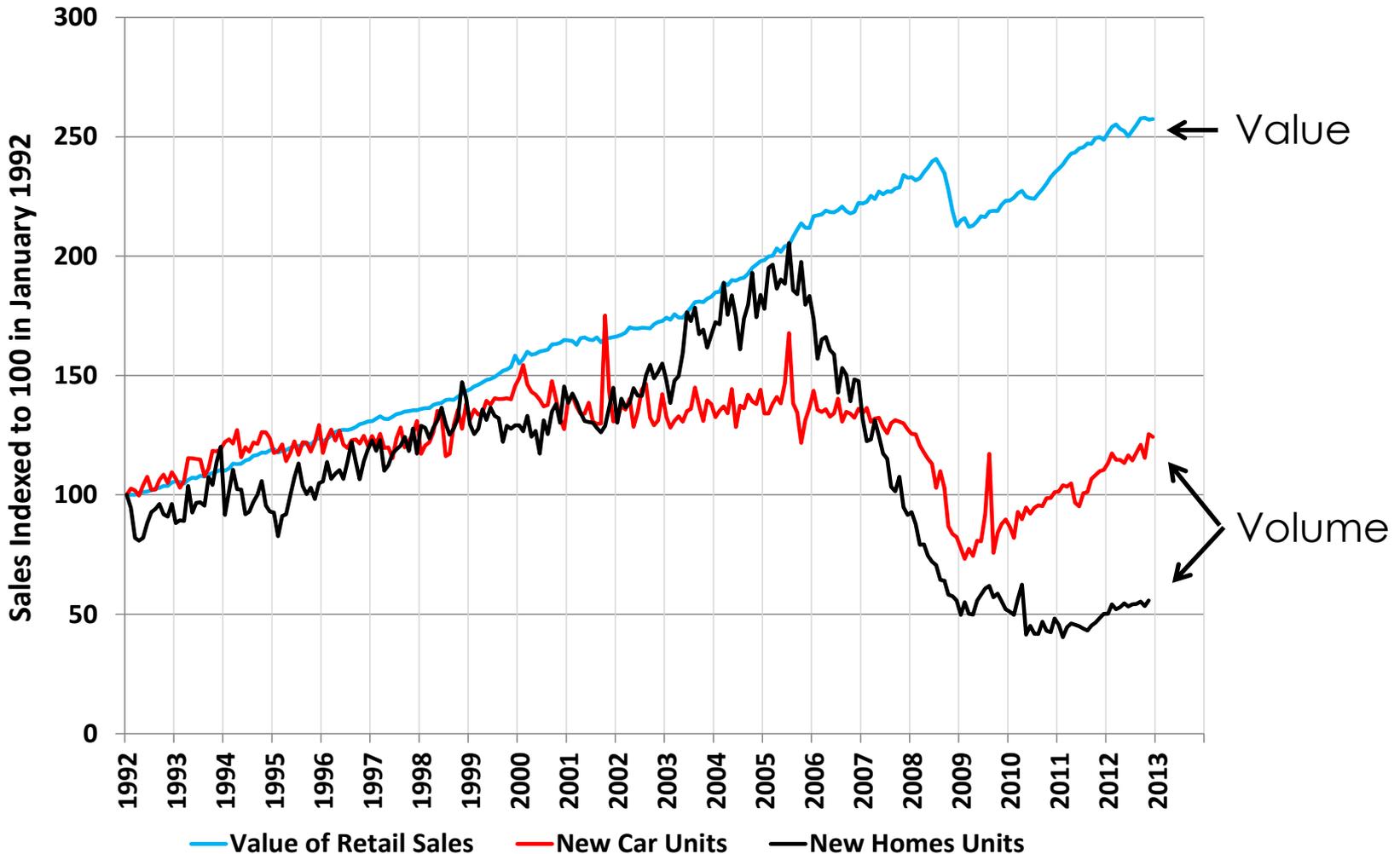
## US Consumer Spending and Global Real GDP Growth



- The US accounts for 20% of World GDP
- US consumers account for 70% of US GDP, or 14% of World GDP
- May not be the case by 2030 or sooner

# Positive Consumer Spending Trends

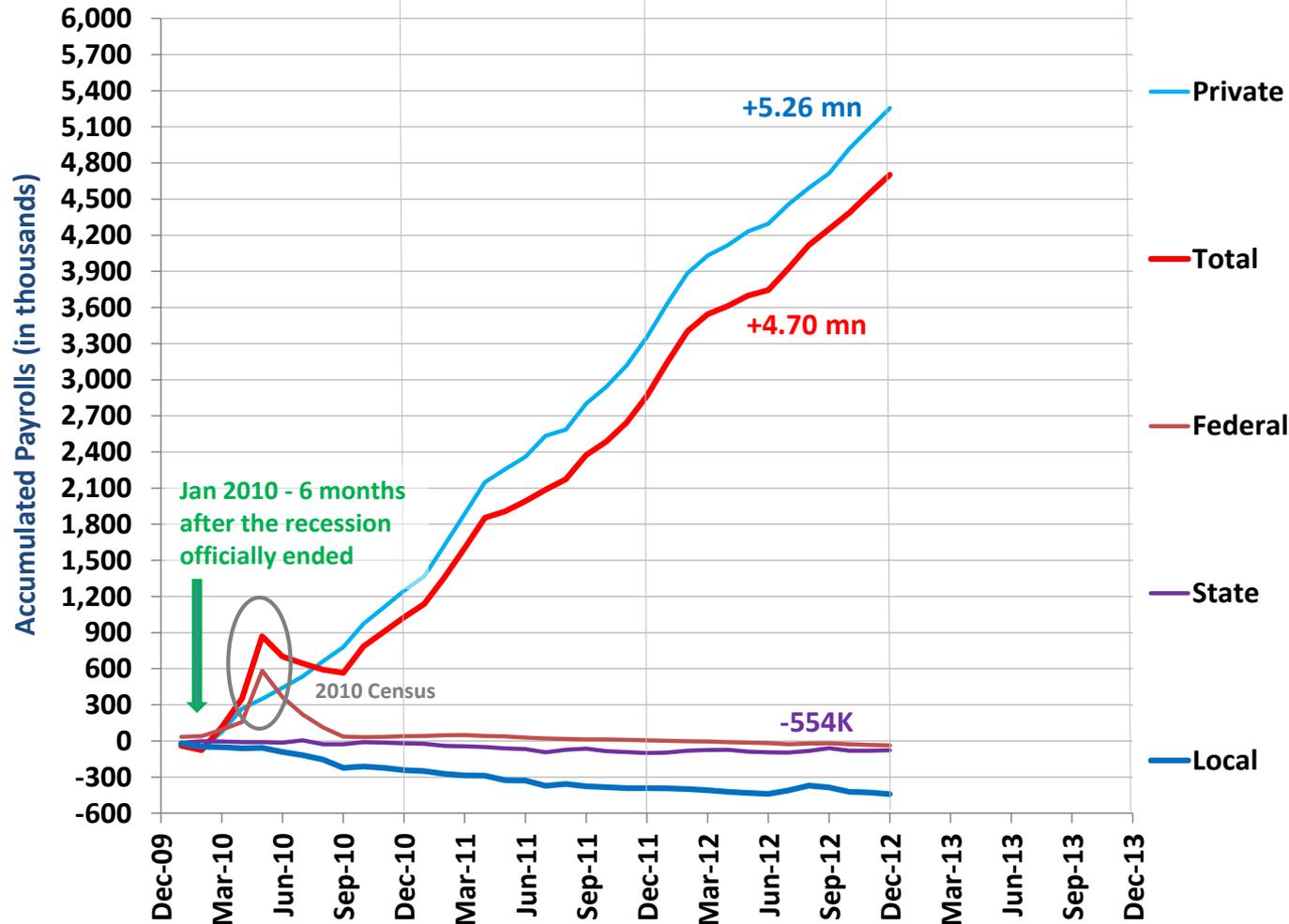
## US Retail, Autos and Home Sales



- Sales are recovering but levels remain below trend... demand is pent up

# Private Sector Has Led Employment Recovery

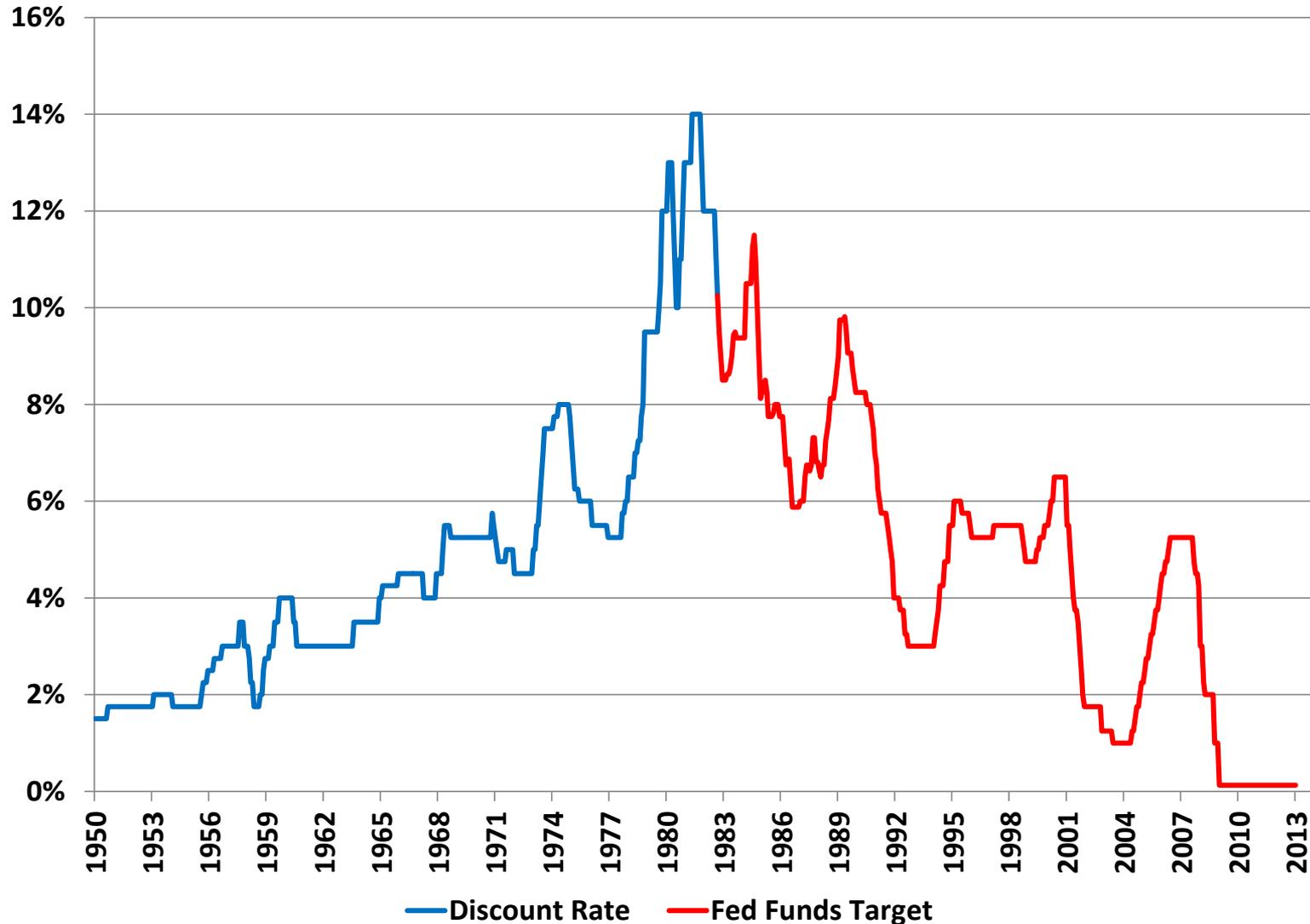
## Changes In Employment Levels Since 2010 By Sector



- Private sector efforts were offset by public sector cutting 550K jobs since Jan 2010
- Employment recovery so far has been weaker than in previous cycles
- At current rate of employment gains, 2007 levels will not be regained until 2014

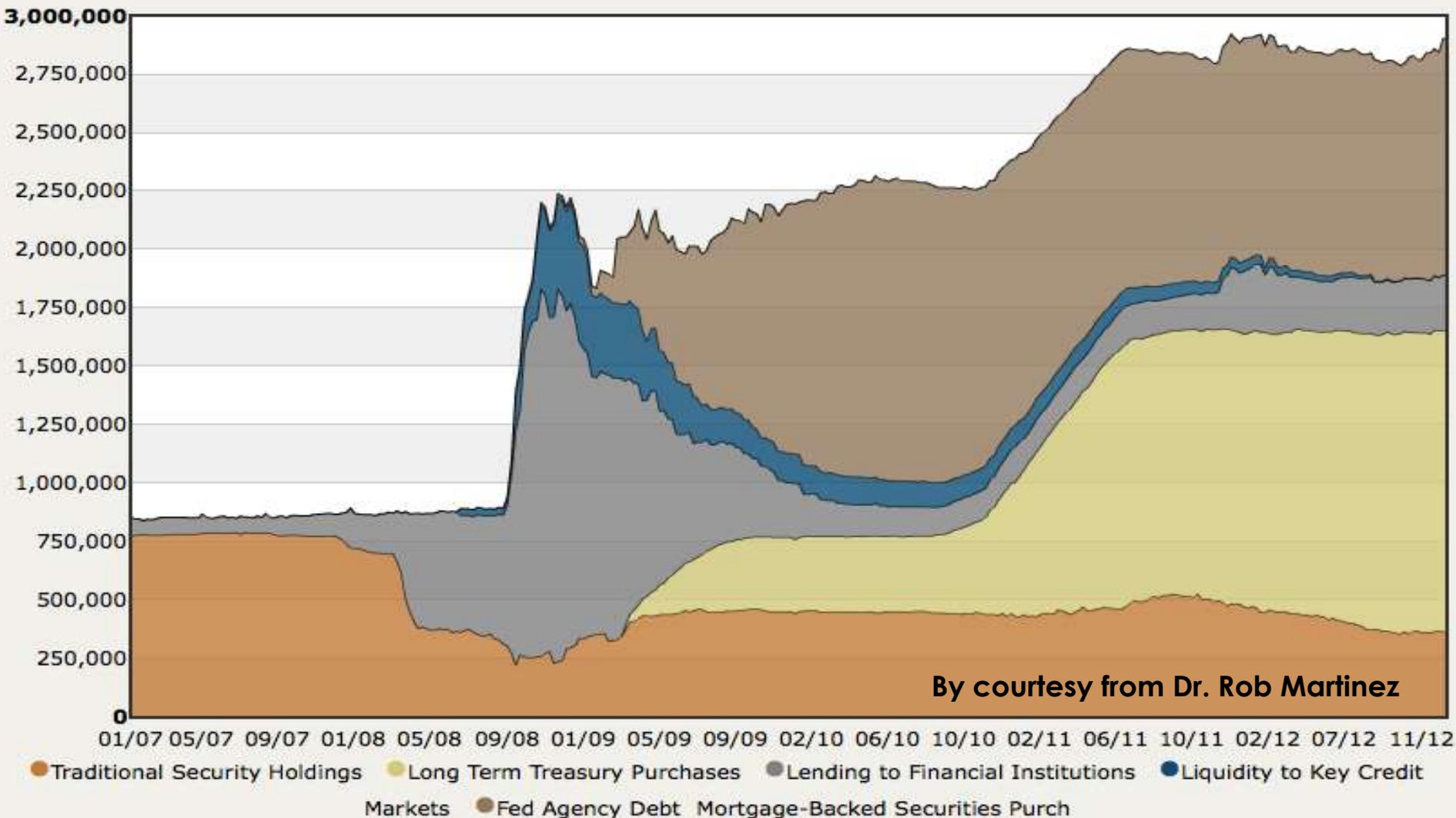
# Federal Reserve Pulled Out All The Stops

## Federal Reserve's Federal Funds Policy Interest Rate Target



- Interest rates are at the lowest levels in at least 63 years

# A Look Inside the Fed's Balance Sheet



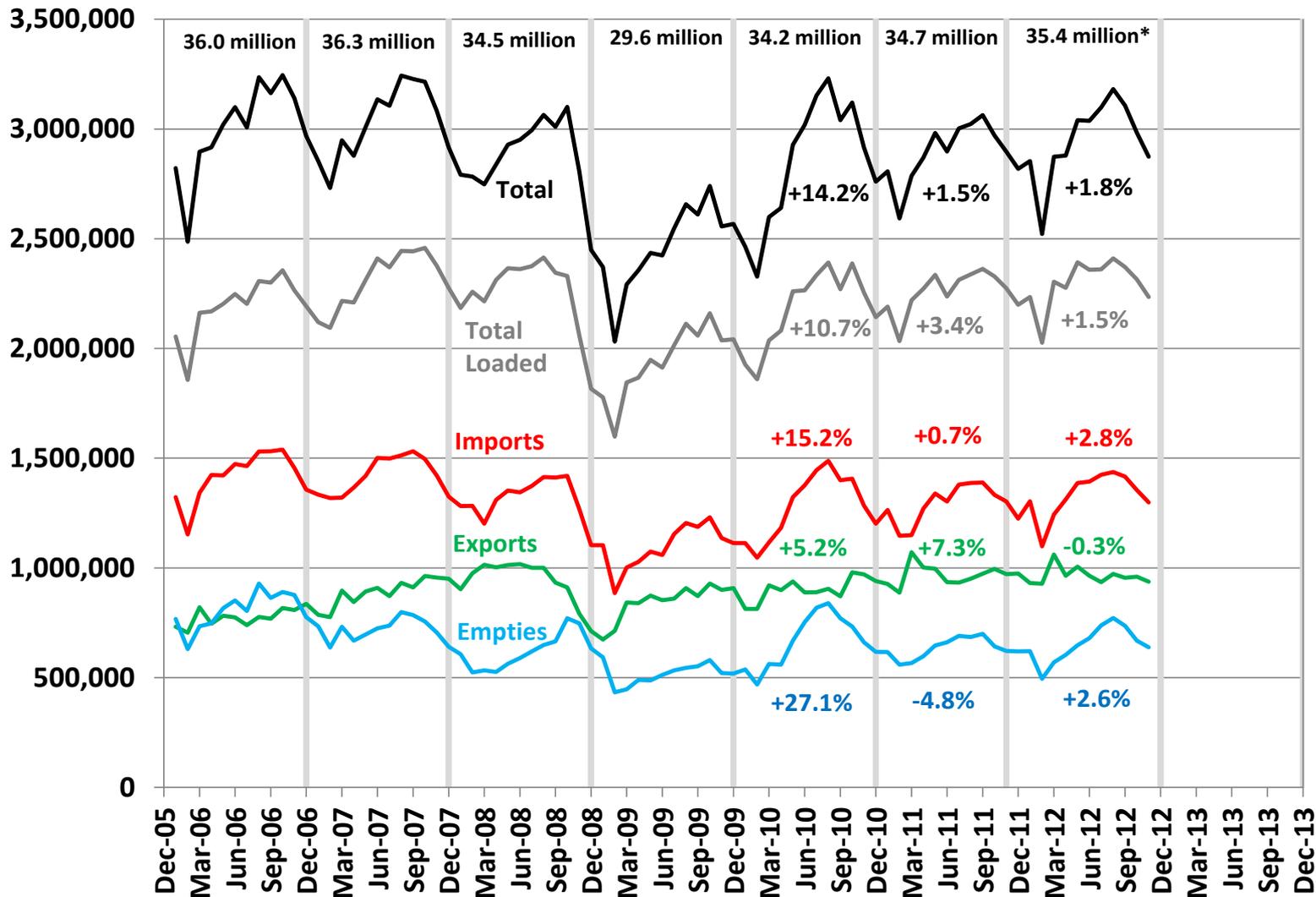
# Scorecard: Stagnation Risk From Policy “Debate”

| Indicator                | Score    | Outlook  |
|--------------------------|----------|--|
| Monetary Policy          | Positive | Low interest rates, ample liquidity (QE3)  |
| Inflation                | Positive | Maybe too low , but commodity prices are volatile due to non-US demand   |
| Fiscal Policy            | Negative | Debt ceiling overshadows near term fiscal policy outlook   |
| Financial Sector         | Positive | FDIC's watch list declining, consumer credit increasing, slight rise in bond defaults & downgrades mostly in stagnant industries |
| Causes of Last Recession | Neutral  | Residential real estate sector has already begun the long process of recovery  |
| Leading Industries       | Positive | Industries likely to lead growth in this cycle are identifiable and have been investing  |
| Production Costs         | Positive | Low interest rates, wages, commodity prices  |
| Labor Markets            | Positive | Employment rising in expected industries   |
| Global Economy           | Neutral  | European debt crisis stabilizing, Emerging Markets deploying expansionary policies   |

- **If US can get past fiscal budget/debt ceiling, GDP could grow >3% in 2013**
- **Modest recession risk in 2015 as Fed begins to raise interest rates**

# US Container Volumes Still Below 2007 Peak

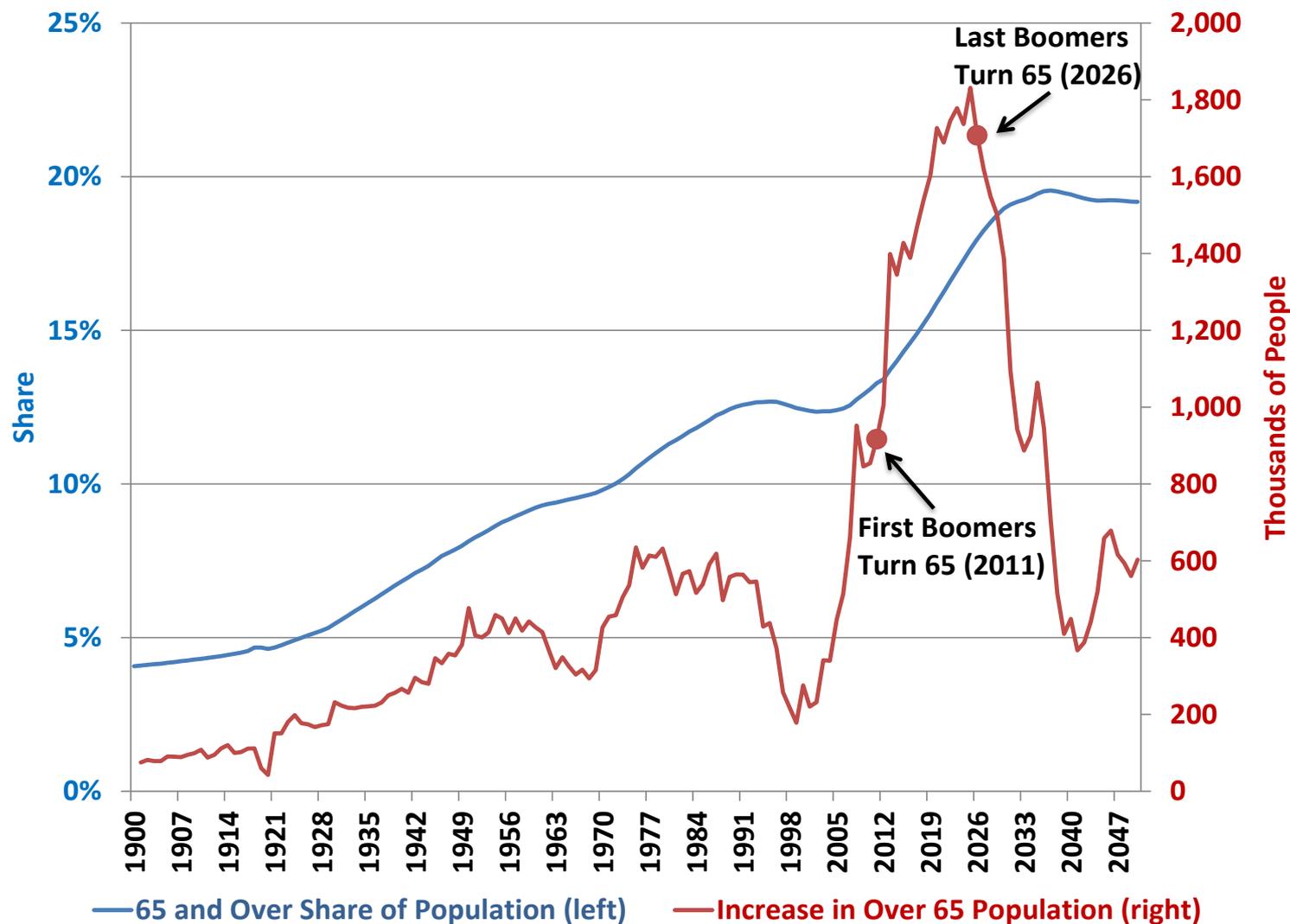
## US International Container Volumes By Type (Through Nov 2012)



- Widespread severe drought and slowing global economic growth negatively impacted US exports

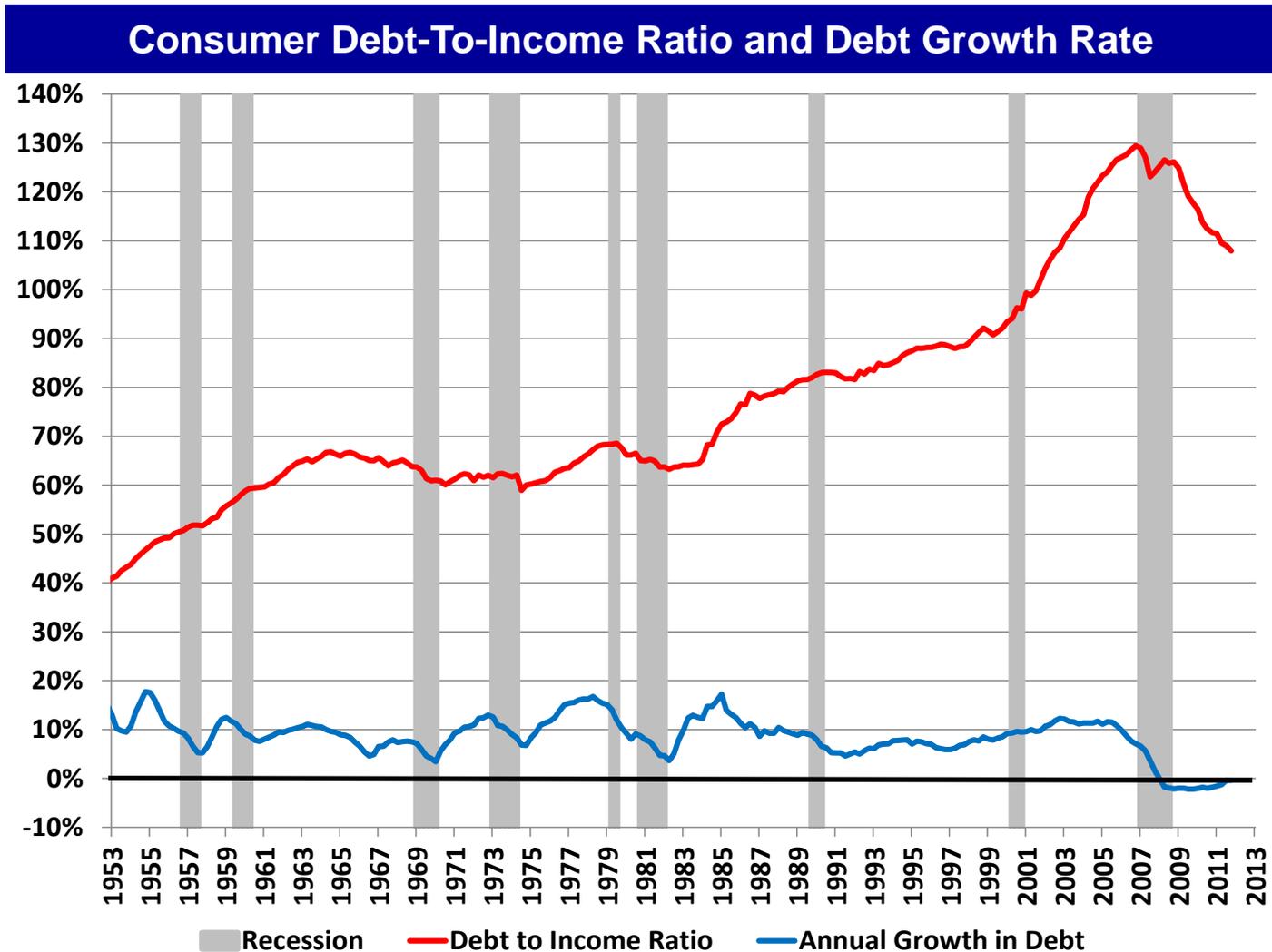
# Unprecedented Grey Tsunami

## Number of People Turning 65 and Share of US Population: 1900 - 2050



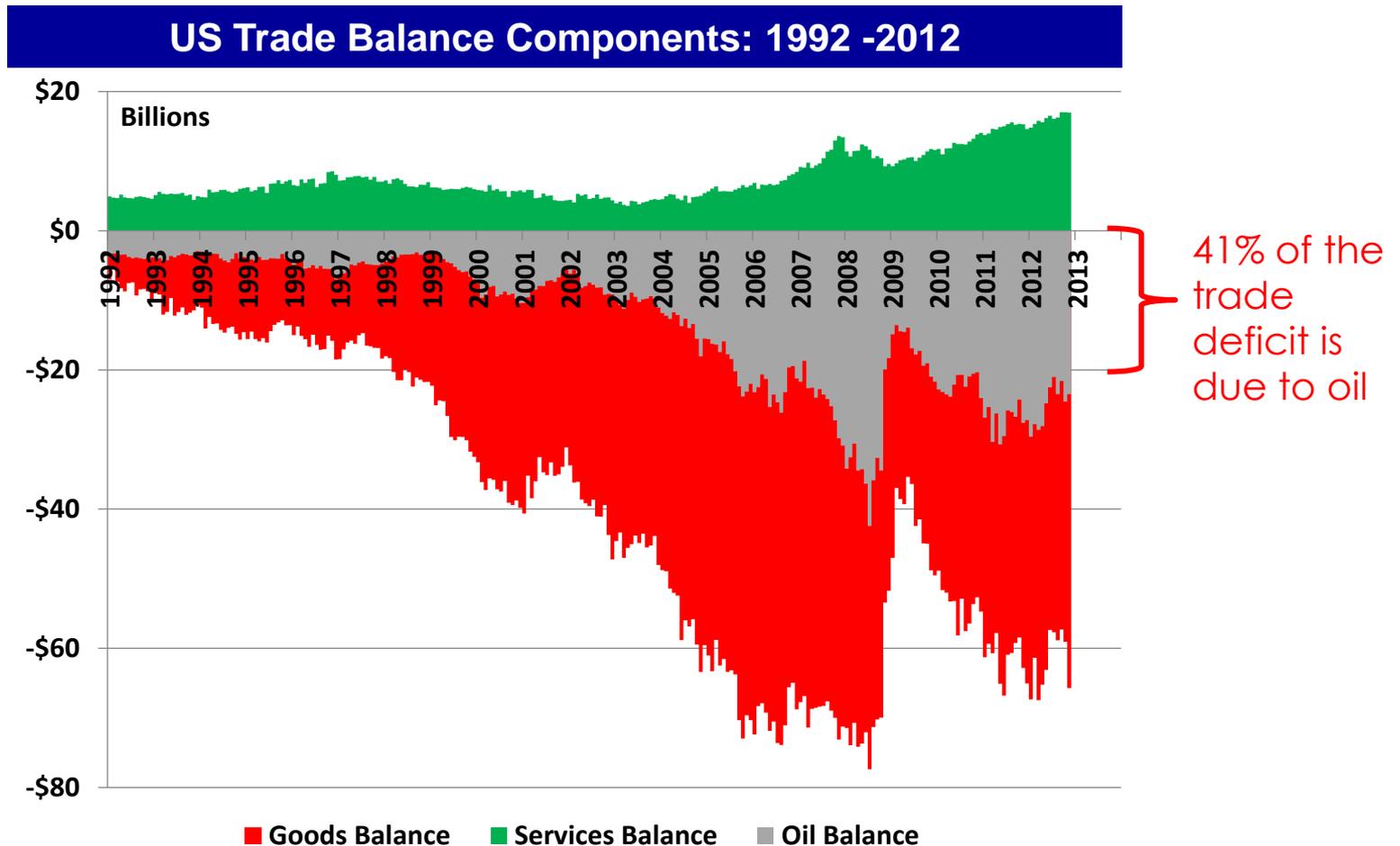
- US has no policy to deal with the economic and financial implications of Grey Wave

# US Consumers Are Still Deleveraging



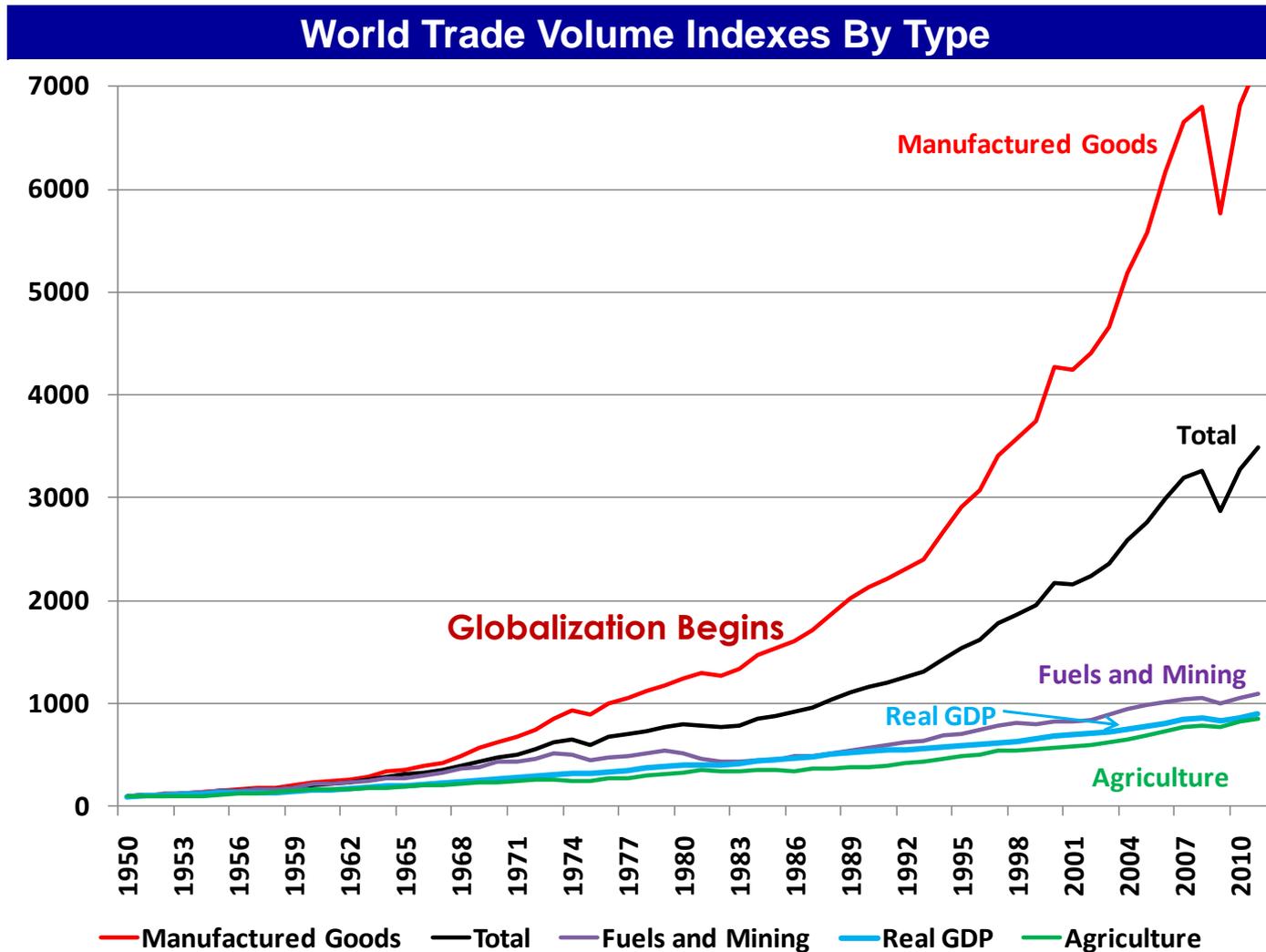
- Between 2007 and 2012 the debt-to-income ratio declined 20% at this rate a “sustainable” level of 90% will not be reached until 2017
- But households are withdrawing funds from 401Ks to pay down debt

# Unsustainable Trade Deficit



- Excluding oil, the goods deficit is 2.5x greater than the services surplus
- The US needs to become serious about exports
- Emerging markets have developed their production capacity now domestic consumption needs to be developed there

# World Trade Has Grown Faster Than GDP



- Growth in global trade has been led by manufactured goods
- Manufactured goods trade grew twice as fast as commodity trade and global GDP

# Key Global Trends & Trade Consequences

## Drivers of Scenarios and Outcomes

| Demographic          | Structural                | Industry        |
|----------------------|---------------------------|-----------------|
| Internet effects     | Resources Constraints     | Super-sizing    |
| Urbanization         | Inadequate infrastructure | Fuel shifts     |
| Aging OECD           | Climate Change            | New bottlenecks |
| Crowded middle class | Sourcing/Automation       | Finance         |



### Previous: Emerging Markets

- Imports grow faster than exports
- Containers grow faster than bulk and project cargo
- East-West and Panama Canal trade
- Investment in import-oriented infrastructure
- 4 Corner strategy

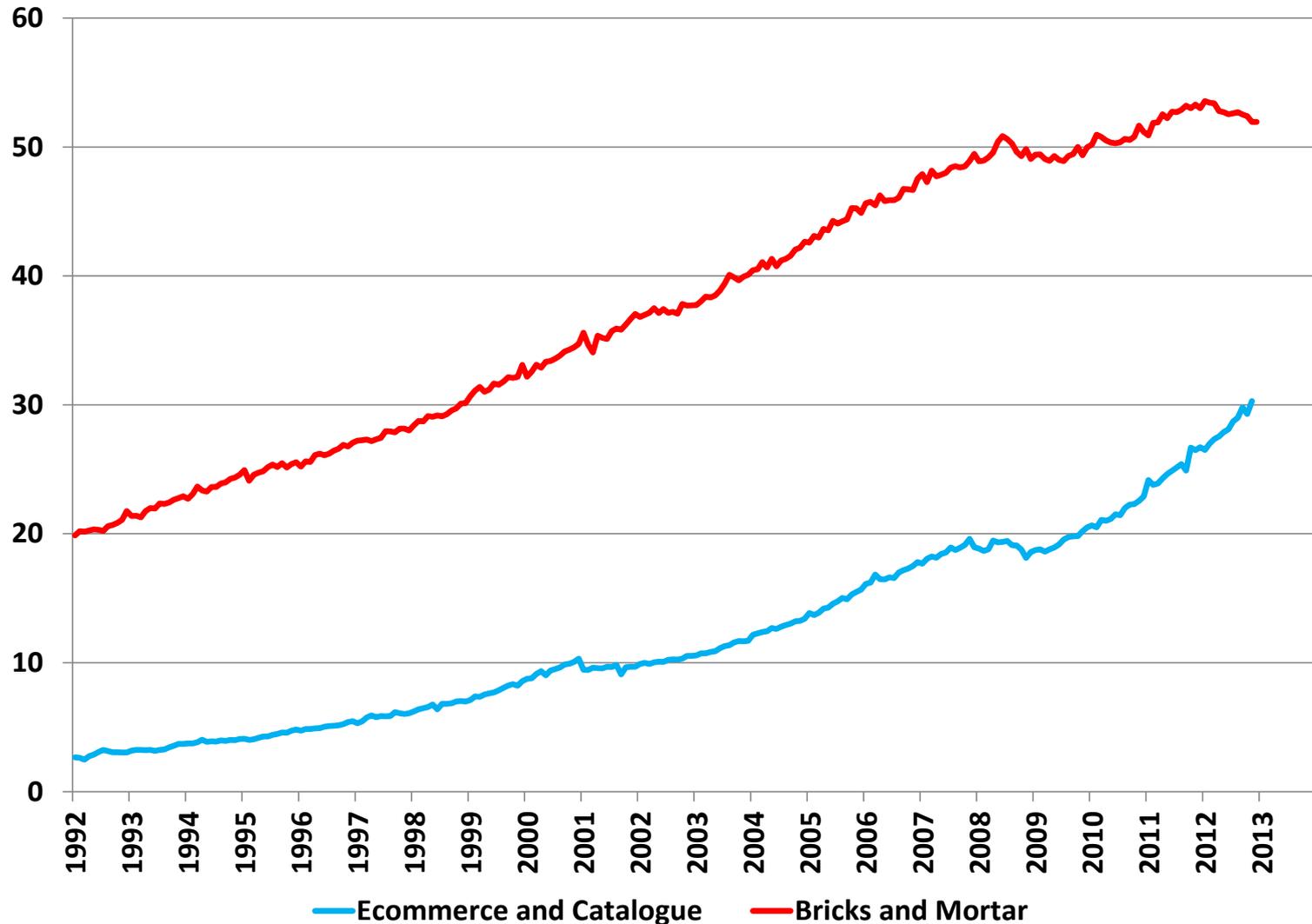


### New: Global Rebalancing

- Exports grow faster than imports
- Bulk and project cargo grow faster than containers
- North-South and Suez Canal trade
- Investment in export-oriented infrastructure
- Ecommerce logistics strategies

# The Internet Is Changing Us

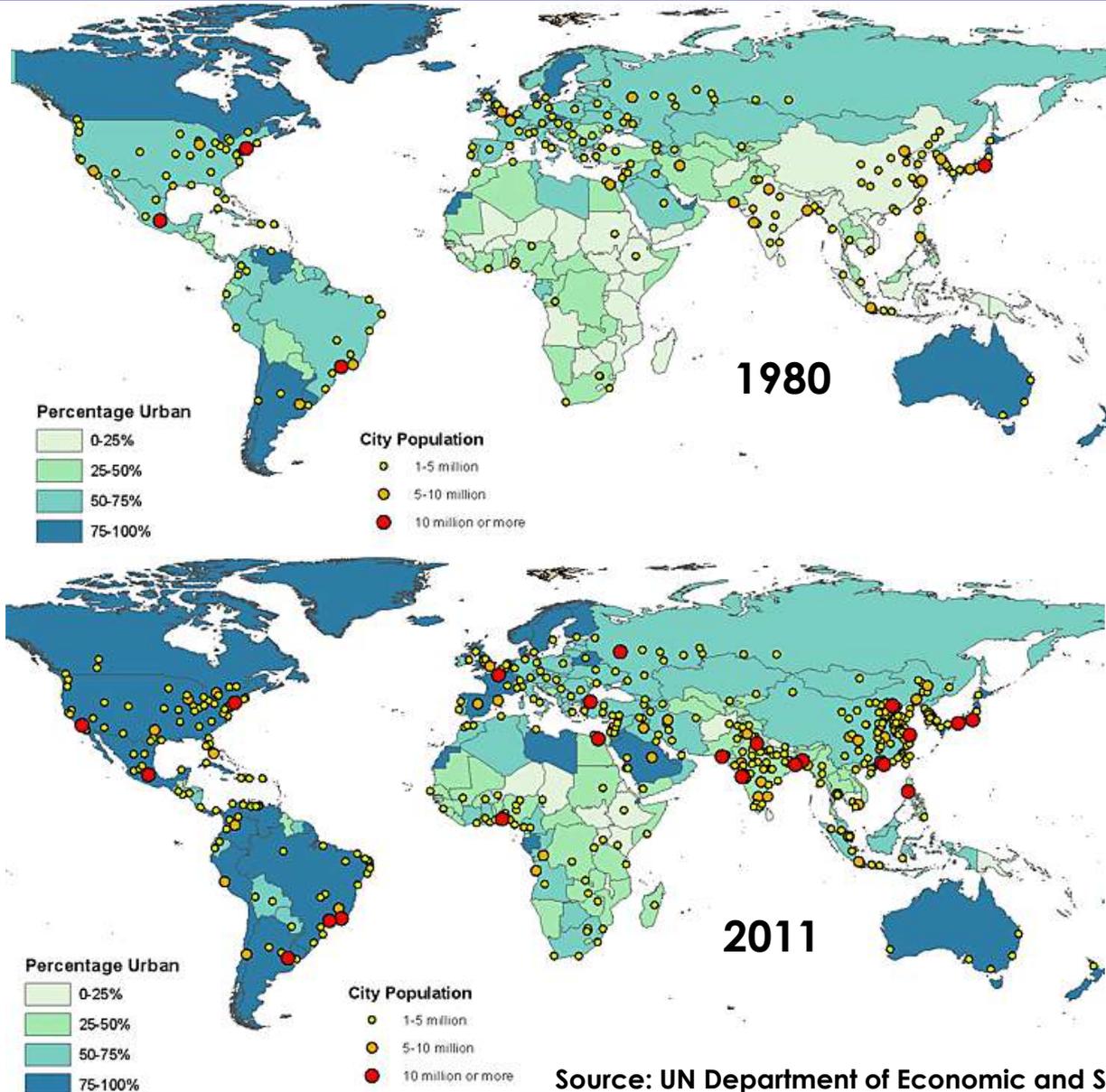
## Retail Sales At General Merchandise and Electronic/Catalogue Stores



- Logistics managers/companies are re-thinking their models – will “4 corners” matter?

# Increasingly Urbanized, Increasingly Brittle

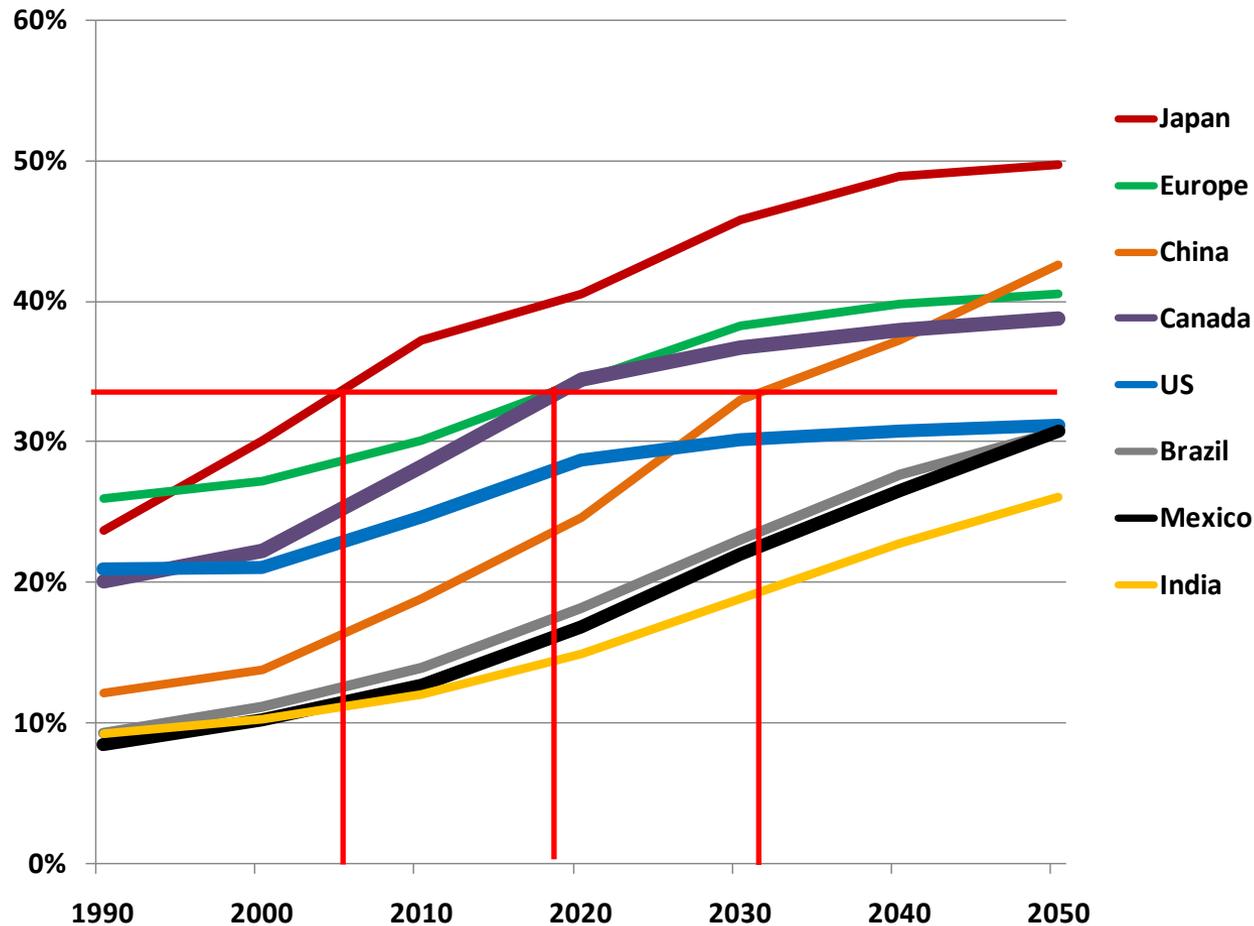
Percentage of urban population and agglomerations by size class



Source: UN Department of Economic and Social Affairs

# The World's Population Is Aging

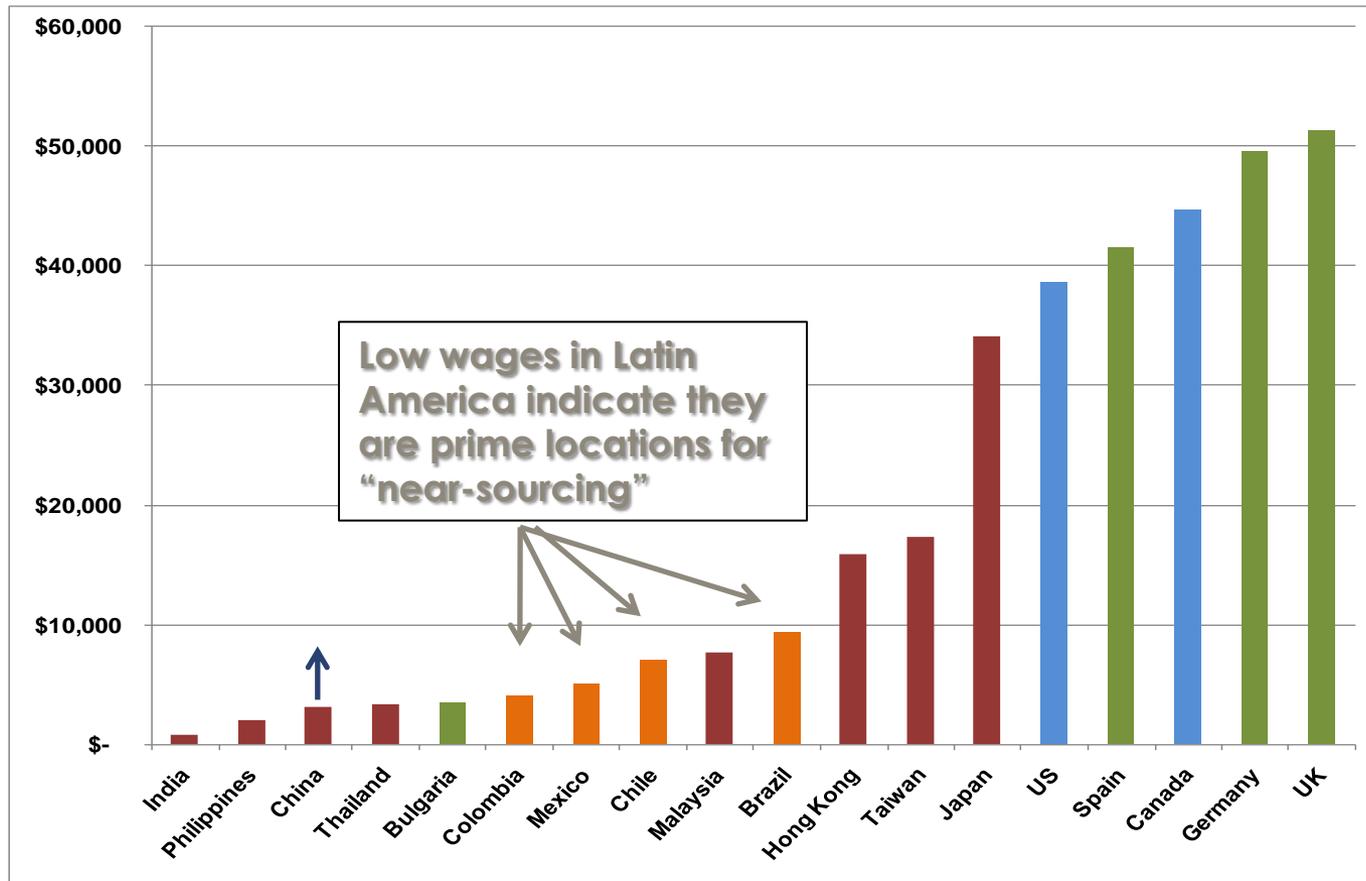
## Proportion of Population Above 55 Years of Age



- These trends have consequences that show up as major long term economic trends
- Europe and Canada will follow Japan before the end of this decade, will China by 2032?

# Manufacturing Wage Comparisons

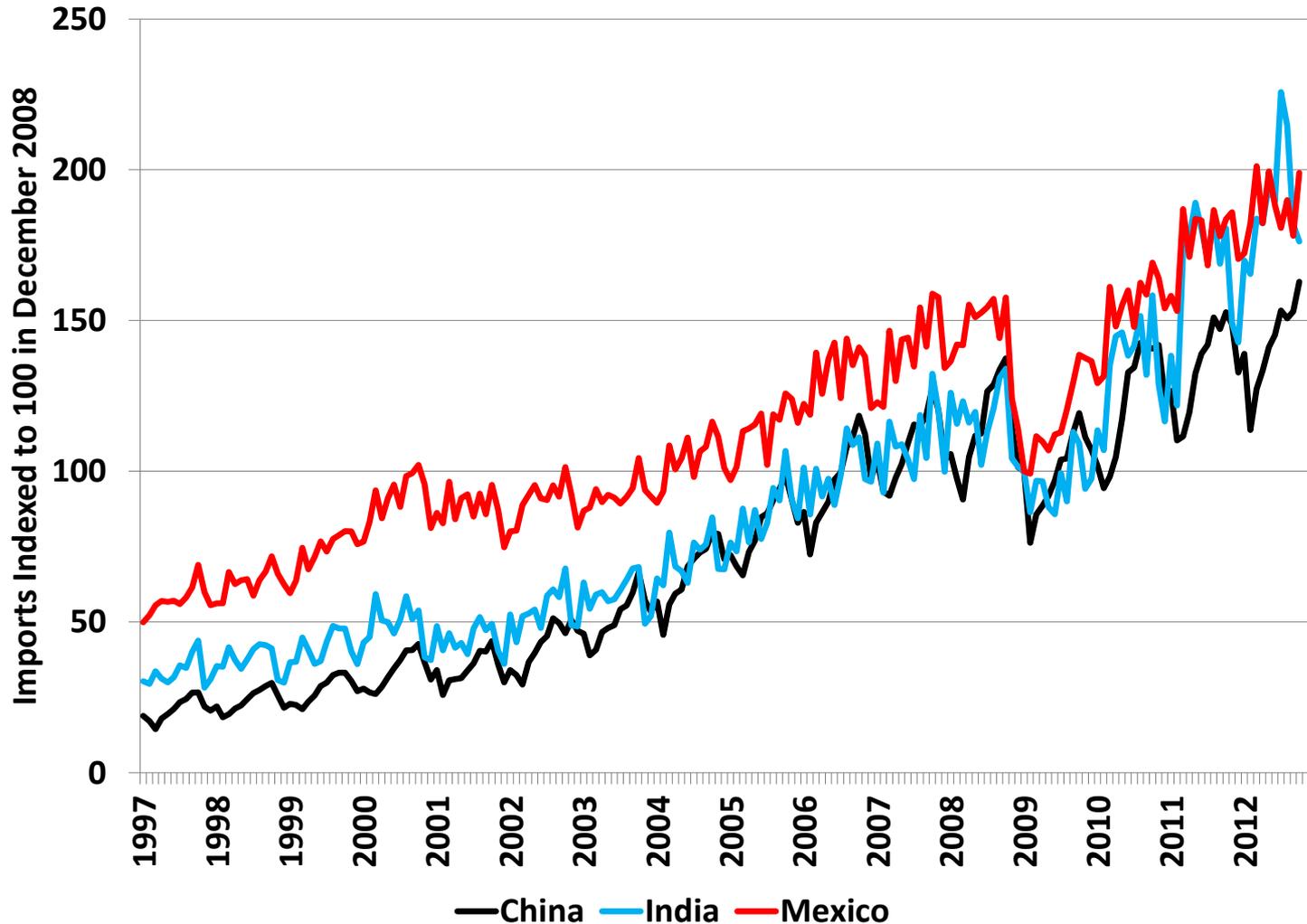
## Manufacturing Wages in US\$ (2008) At Prevailing Exchange Rates



- Rising wages in China make Central America and South Asia more attractive for outsourcing
- Mexico can serve both North and South America while helping US importers shorten their supply chains

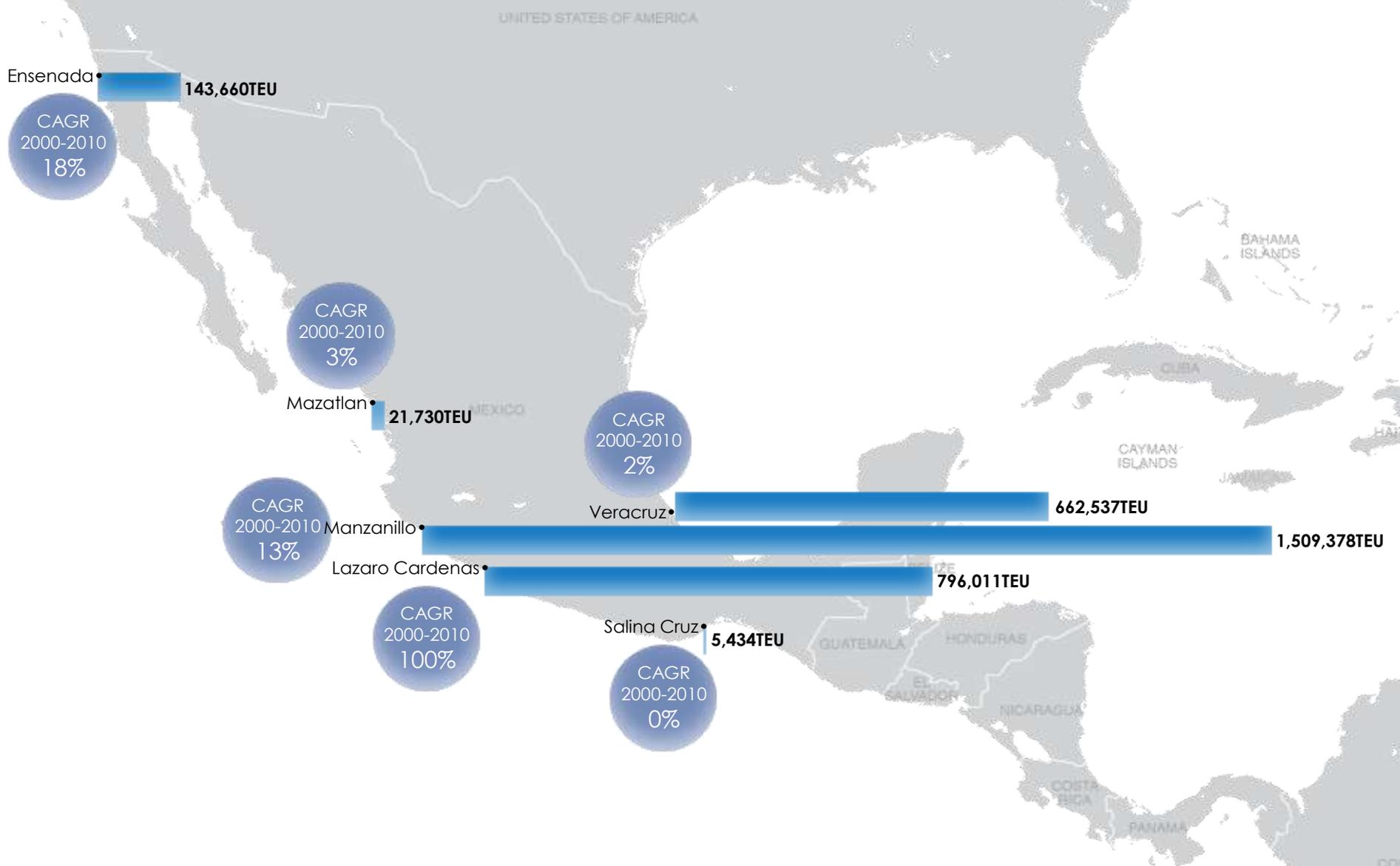
# China Is Losing Share of US Imports

## Index of Value of US Imports From China, India and Mexico

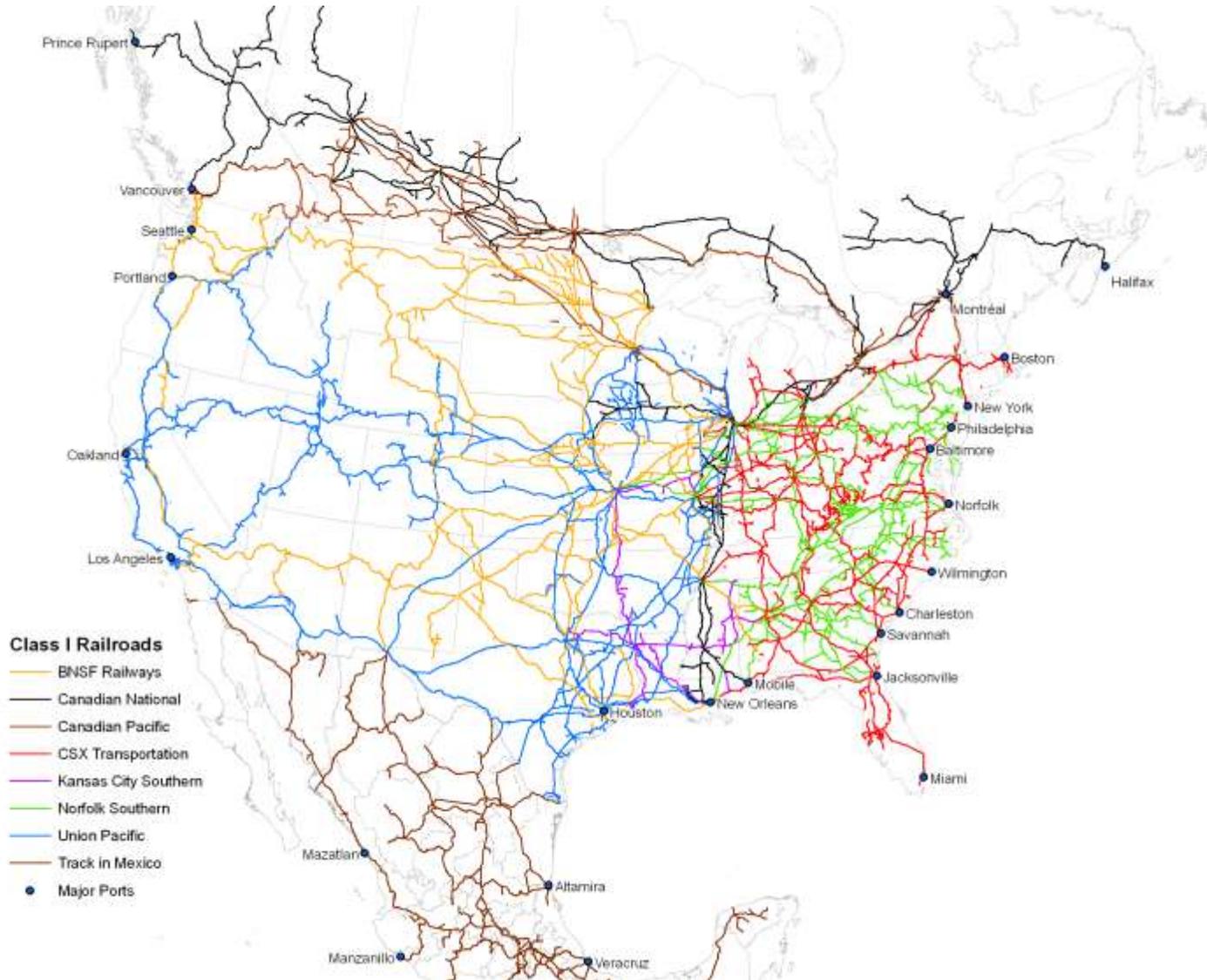


- Rising wages in China make other locations more attractive for outsourcing
- Automation could offset outsourcing trends

# Mexican Pacific Coast Ports



# Increasingly Integrated Mexican Rail



- Mexican freight flows North mainly by truck but rail is poised to gain share

# Brazil Is Repositioning Itself: National Ports Plan

## Investimentos - Região Norte



## Investimentos - Região Nordeste



## Investimentos - Região Sul

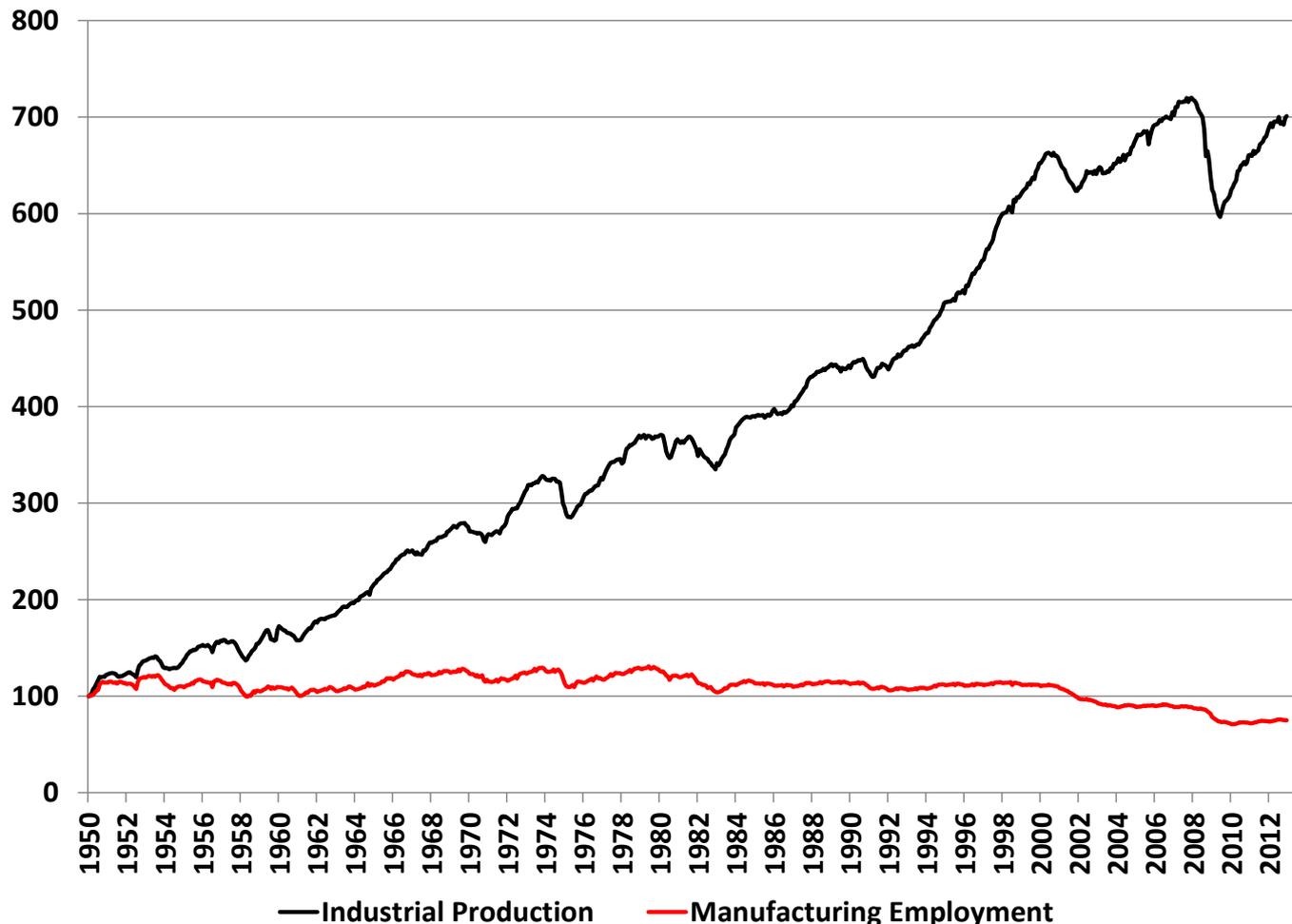


## Investimentos - Região Sudeste



# Manufacturing Continues To Change

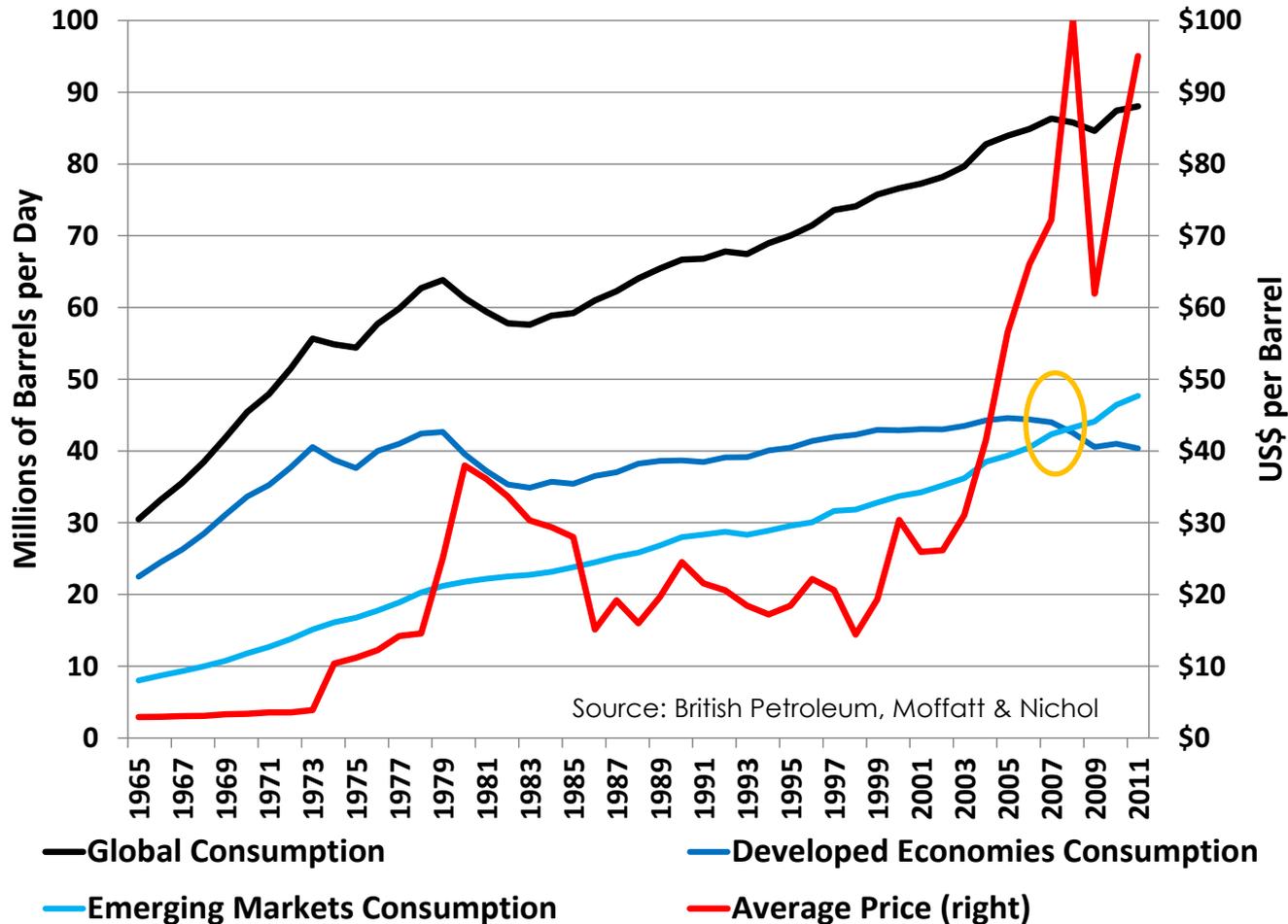
## Manufacturing Production and Employment Indexes (1950 = 100)



- US manufacturing output has risen 7-fold since 1950 while employment fell 25%
- Capital-labor substitution (automation) and shifts towards higher-end capital goods
- US exports are driven by comparative and competitive advantages

# Oil Consumption Trends 1965 - 2011

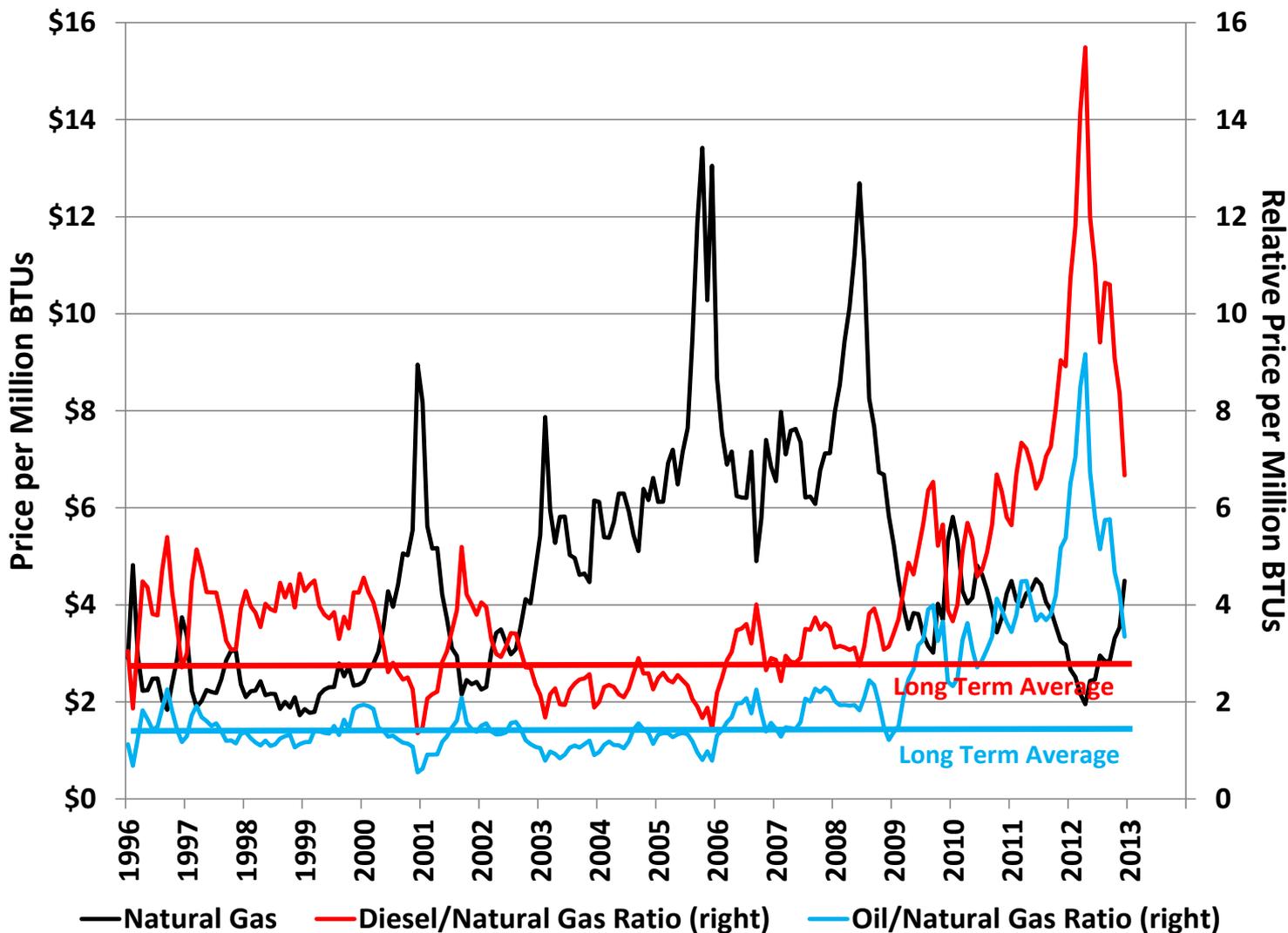
## Crude Oil Consumption and Annual Average Price Per Barrel



- Since 1972 growth in oil consumption has come from Developing Economies
- Since 2008 Emerging Markets consume more oil than Developed Economies
- US has a large supply of natural gas – not yet a globally traded commodity

# Energy Consumption Patterns Will Change

## Natural Gas Spot and Relative Prices Per 1 Million BTU



- Horizontal drilling has significantly changed energy price dynamics
- Several companies are installing natural gas fuel stations across the US

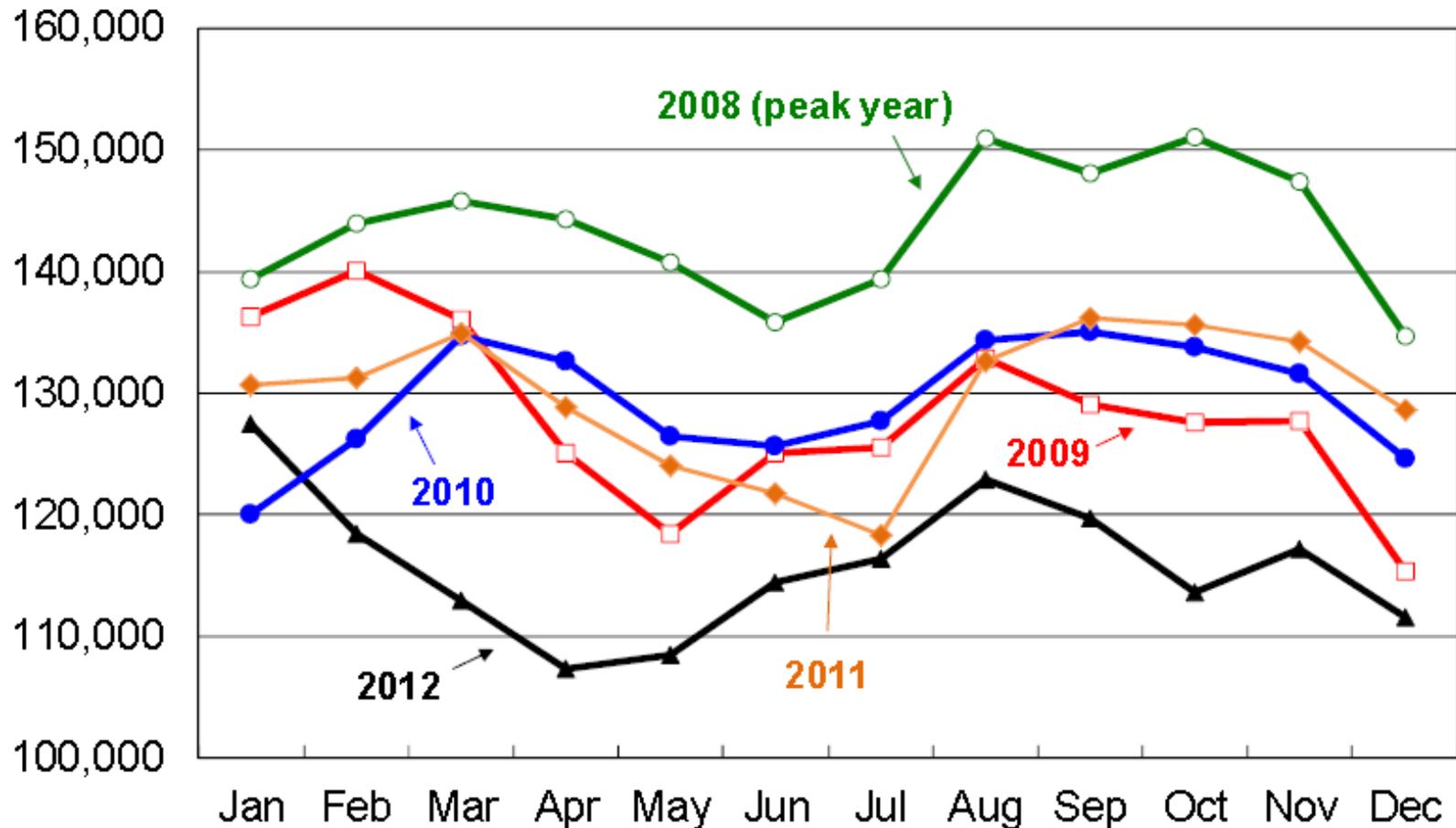
# US Freight Movement Patterns Could Change

| <b>Freight Movement Shares By Mode</b> |                                |                                      |                                   |              |
|--|--------------------------------|--------------------------------------|-----------------------------------|--------------|
|  | <b>Less Than<br/>250 Miles</b> | <b>Between<br/>250 and 750 Miles</b> | <b>Greater Than<br/>750 Miles</b> | <b>Total</b> |
| <b>Air</b>                             | 0.1%                           | 0.0%                                 | 0.2%                              | 0.1%         |
| <b>Truck</b>                           | 81.8%                          | 60.8%                                | 28.6%                             | 71.2%        |
| <b>Rail</b>                            | 3.5%                           | 19.2%                                | 34.5%                             | 10.3%        |
| <b>Water</b>                           | 2.7%                           | 4.1%                                 | 5.2%                              | 3.3%         |
| <b>Multiple Modes &amp; Mail</b>       | 1.3%                           | 5.1%                                 | 8.9%                              | 3.0%         |
| <b>Pipeline</b>                        | 6.9%                           | 9.0%                                 | 21.2%                             | 9.1%         |
| <b>Not Identified</b>                  | 3.7%                           | 1.8%                                 | 1.3%                              | 3.1%         |
| <b>Total</b>                           | 100.0%                         | 100.0%                               | 100.0%                            | 100.0%       |

- Trucks are the dominant mode of US domestic freight movement
- Low prices, stronger LNG engines and increasing availability of fuel stations could increase the trucking sector's dominance unless railroads adopt LNG too
- Natural gas is not yet a globally traded commodity – the impact of exports on prices is being debated

# Railroads Are Losing Their Staple... Exports?

## Average Weekly US Rail Carloads of Coal

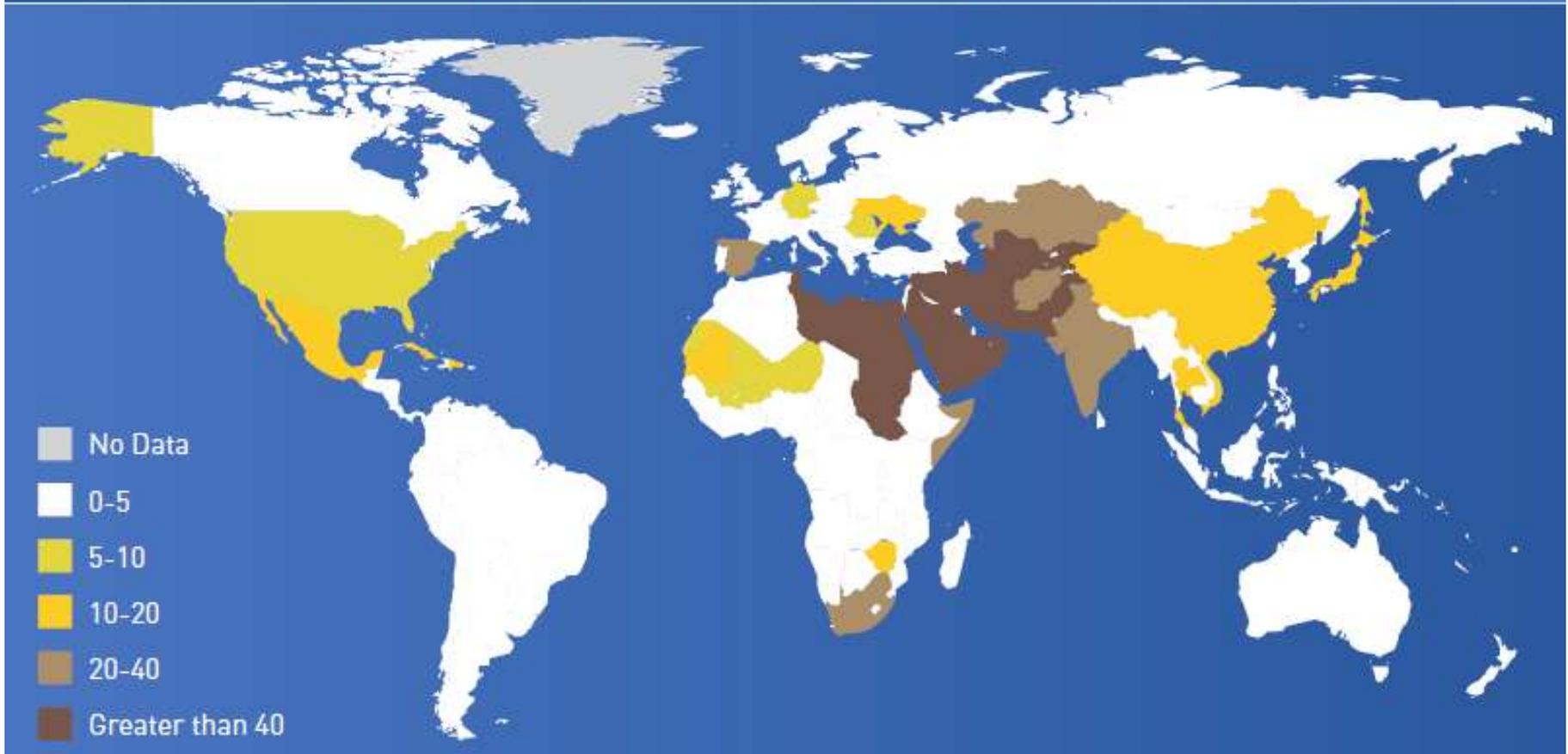


Data are weekly average originations for each month, are not seasonally adjusted, exclude U.S. operations of CN and CP, and reflect revisions to original reporting. Source: AAR

- In the last 3 years coal carloads have declined from 45% of total rail carloads to 41% in 2012

# Water Is Becoming Relatively Scarce

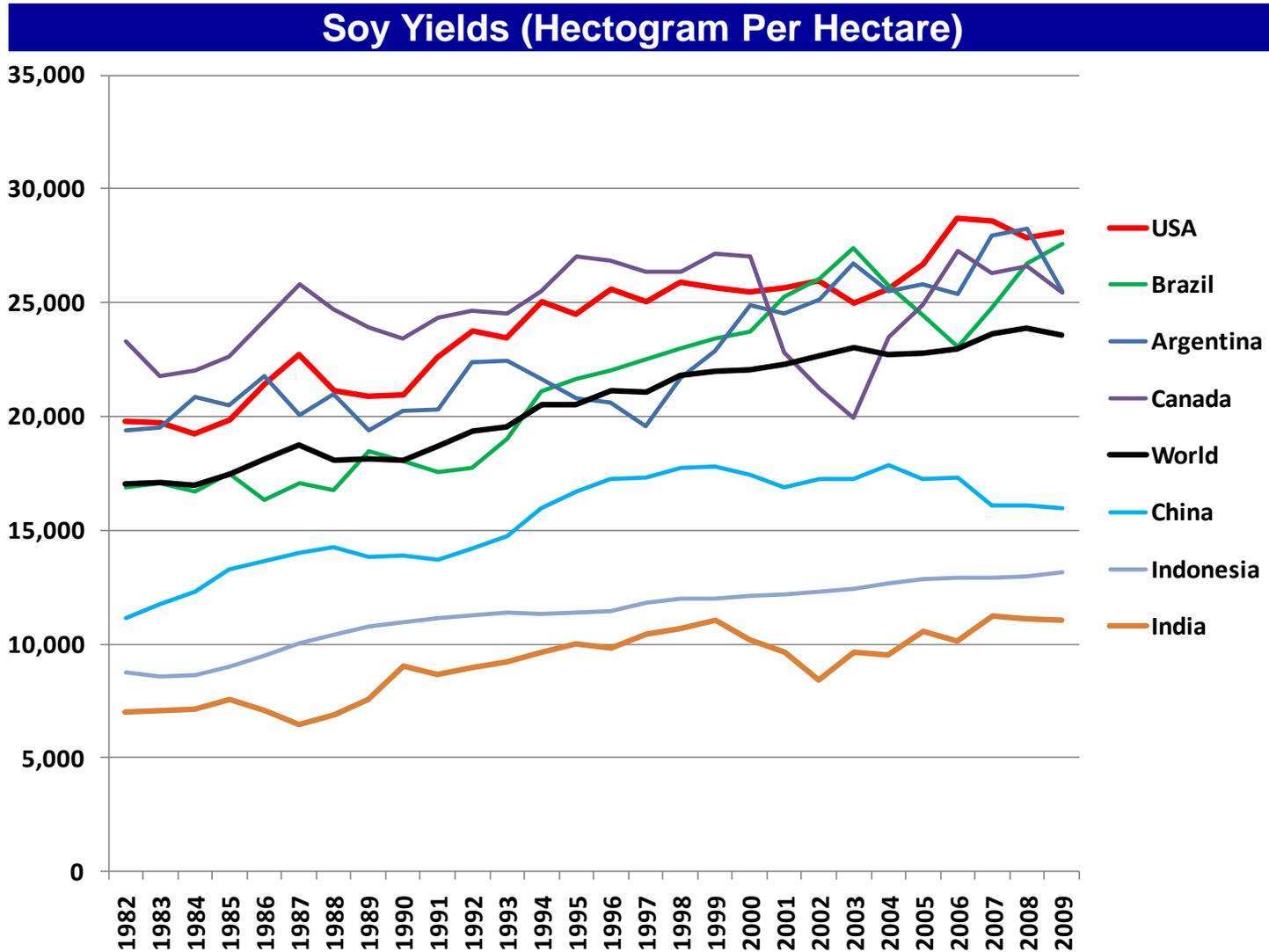
Agricultural water withdrawals as a percentage of total renewable water resources  
Map shows where withdrawals for agriculture are critical high →40 % and indicative of water stress 20-40 %



Source: UN Food and Agricultural Organization

- **Water and land scarcity is a growing problem in Asia and the Middle East**
- **This will escalate geopolitical tensions**

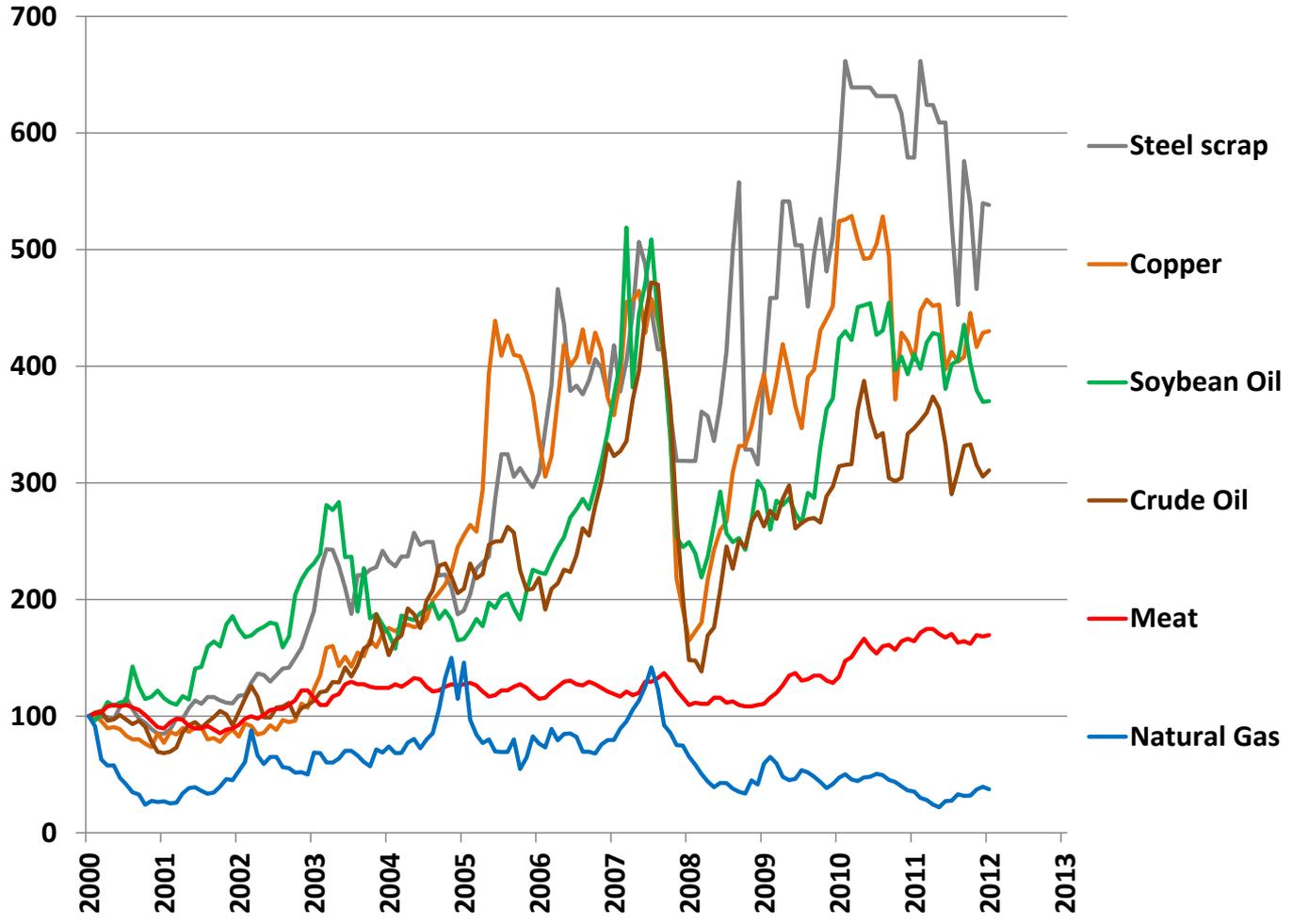
# Soy Yield Trends - Large Producers



- US, Canada, Brazil and Argentina have high rates of agricultural productivity
- Large nations with faster growing consumption have lowest productivity

# Raw Materials Demand Growing Faster Than Supply

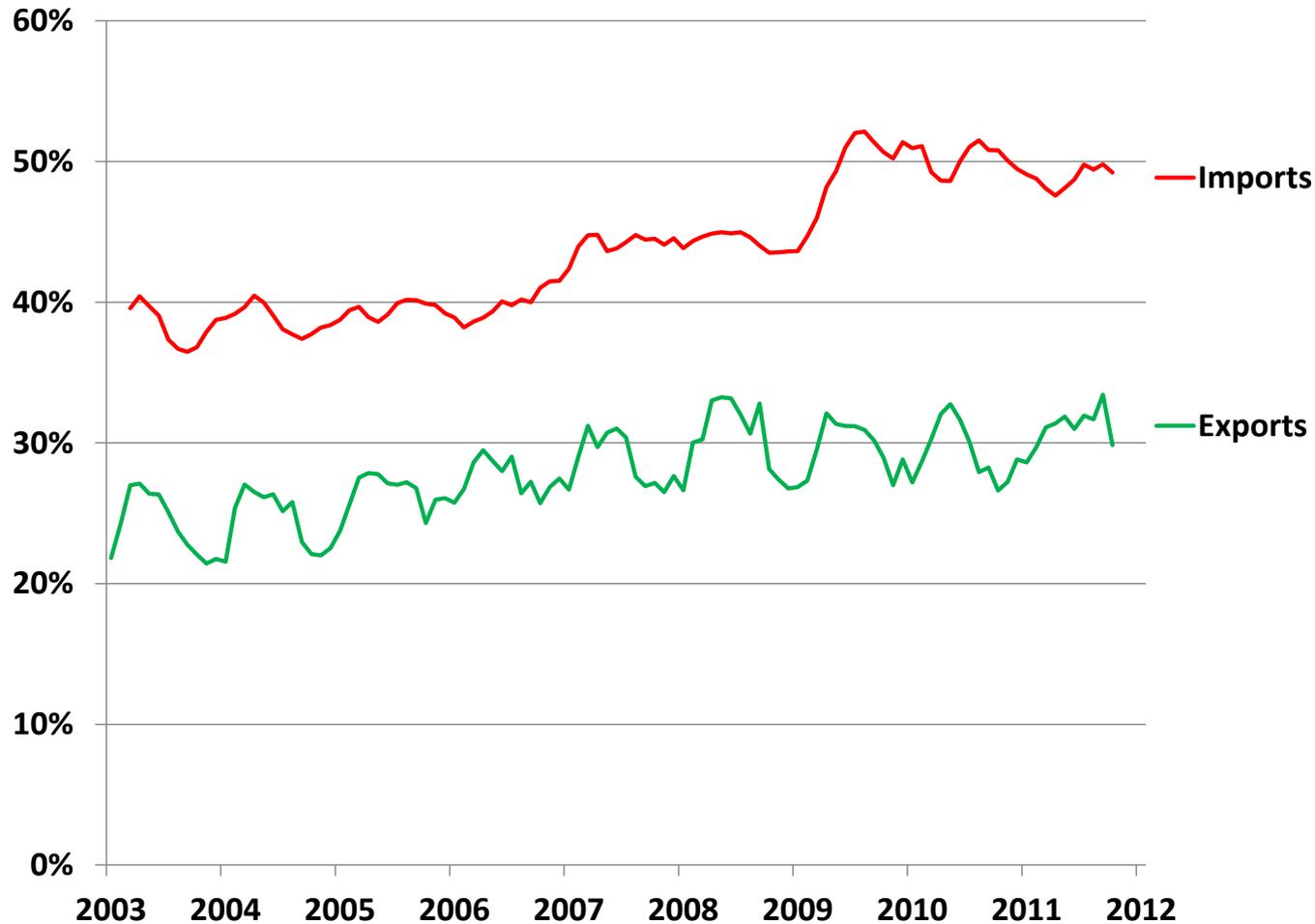
Major Commodity Price Indexes (2000 = 100)



- Metals and agricultural prices have risen faster than energy prices
- Household incomes rising so consumers are willing and able to improve nutrition

# Containerization of Freight Is Increasing

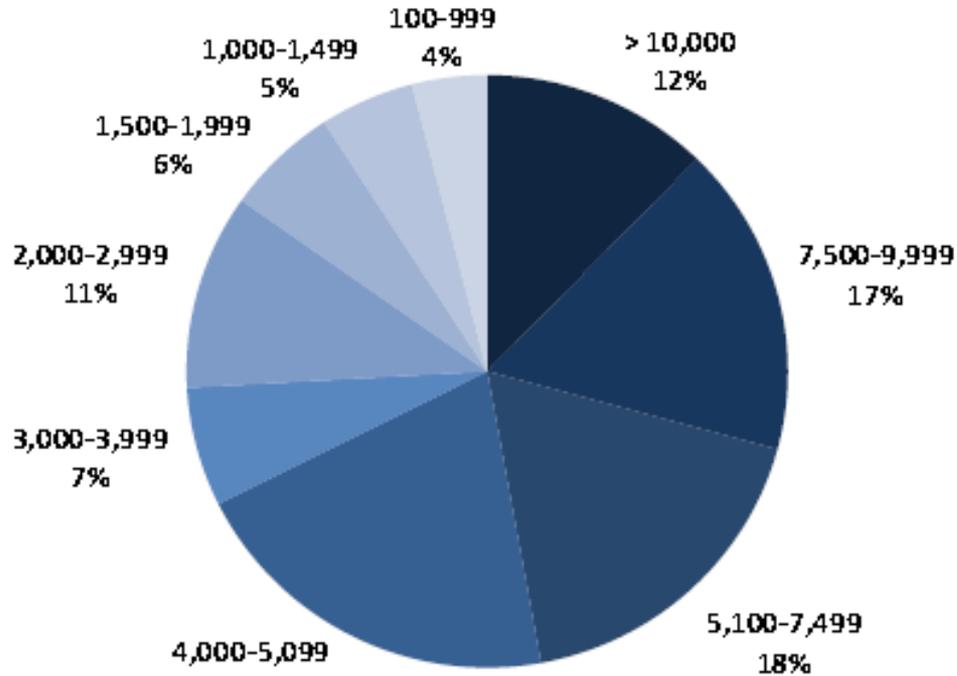
## Percentage of Non-fuel Containerized Marine Freight



- US commodity exports, particularly agricultural goods, are increasingly containerized
- Carriers need to turn equipment efficiently which constrains agriculture exports

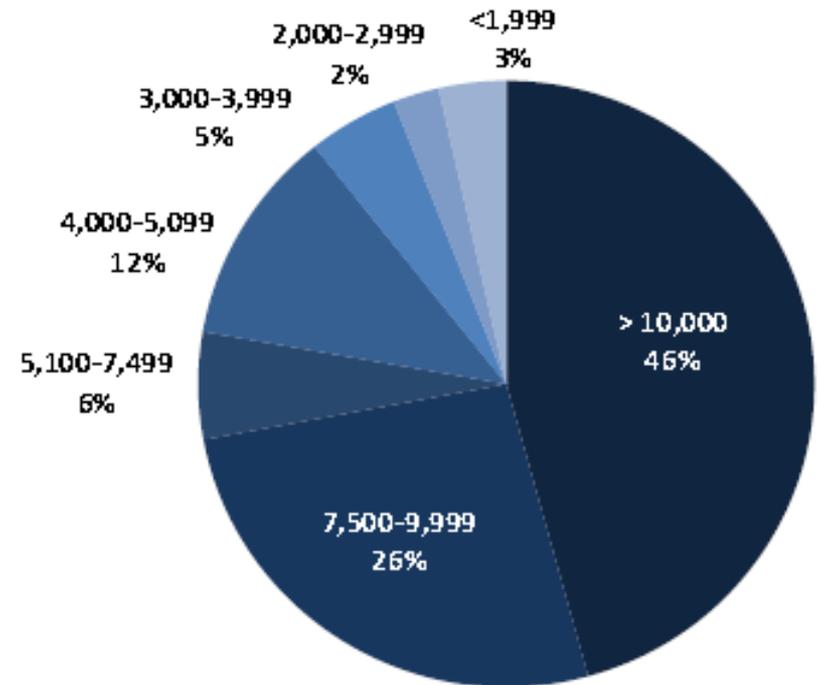
# Larger Container Vessels

## Global Fleet Composition by Capacity



Source: Alphaliner

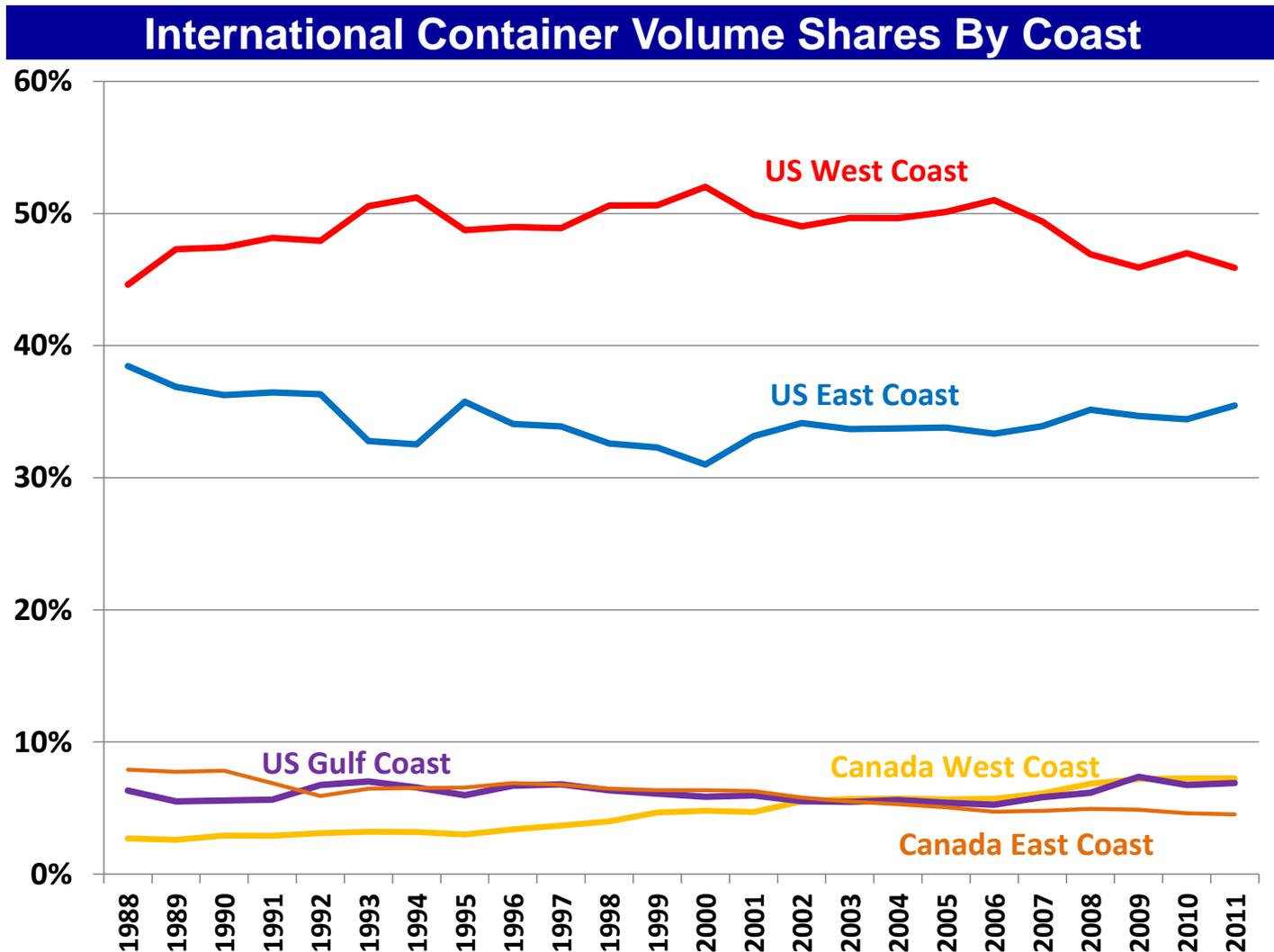
## Global Order Book



Source: Alphaliner

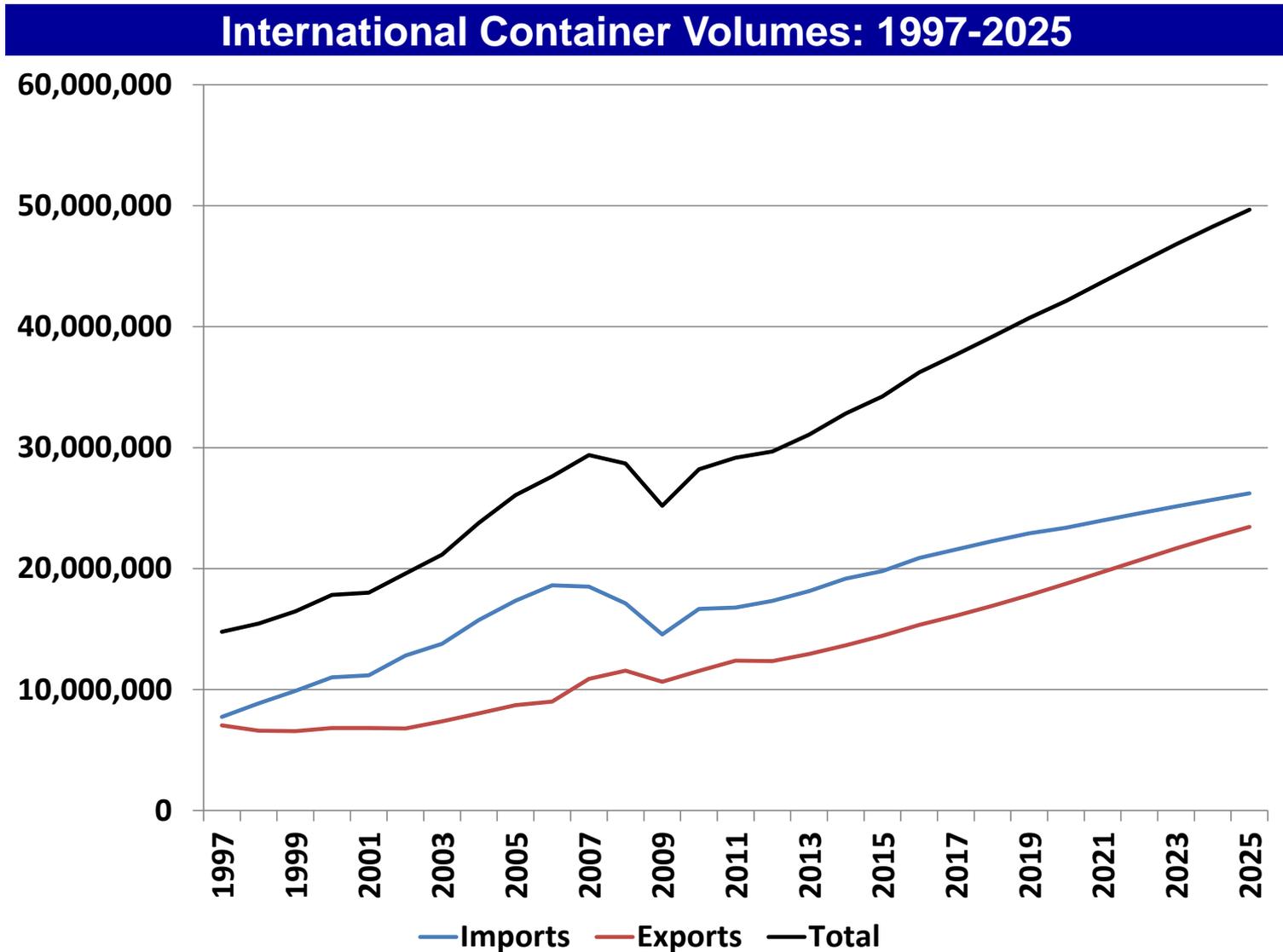
- Rising fuel costs are offset by economies of scale
- Widening of the Panama Canal also incentivizes deployment of larger vessels
- High levels of liabilities and low revenue growth is hazardous to financial health

# International Container Volume Shares



- Expansion of the Panama Canal, near-sourcing to Mexico and India will impact the share of North American container trade handled by each coast

# International Container Volume Outlook



- Key drivers: emerging markets support export growth, increasing containerization

# In Summary...

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- **World economic outlook depends on policymakers**
  - Fiscal Cliff
  - Solution is investment in infrastructure – transportation and energy – not blind austerity
- **Evolving trade patterns**
  - Asia to become an even larger raw materials consumer
  - Manufactured goods likely to be sourced closer to the US
- **Freight movement industry will have to adapt**
  - How to containerize exports
  - How to support urbanized and increasingly isolated consumers
- **US has the potential to survive and thrive but stagflation is the central tendency without investment in transportation and energy infrastructure**
- **Thank you for your attention**

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**Dr. Walter Kemmsies**, Chief Economist  
Moffatt & Nichol, New York  
104 West 40th Street  
14th Floor  
New York  
NY 10018  
T 212.768.7454  
F 212.768.7936  
[www.moffattnichol.com](http://www.moffattnichol.com)

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