



Infrastructure to 2030 : The Global Context for Denmark

Copenhagen
12 April 2010

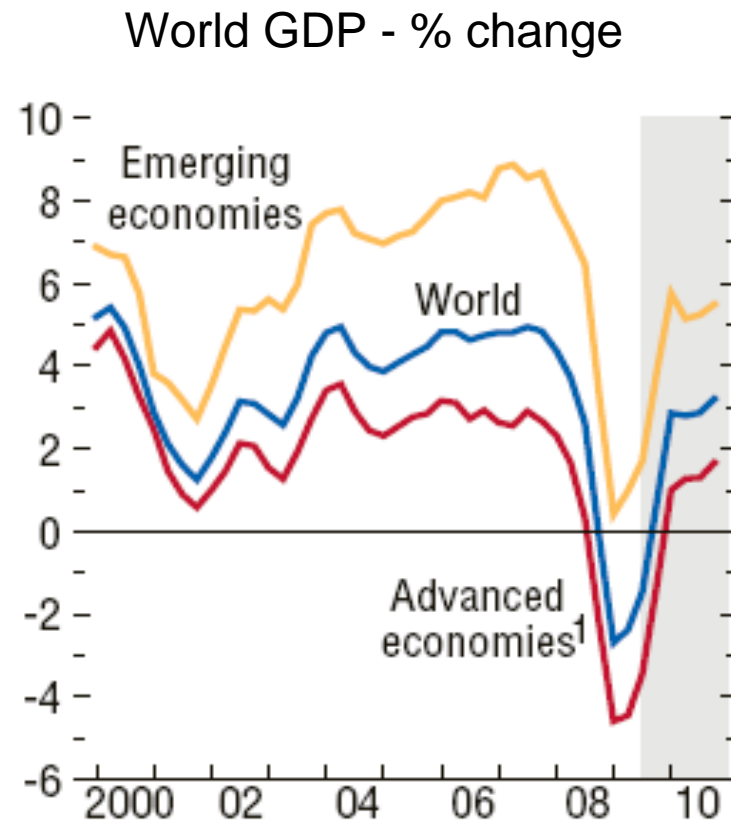
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Plan of the presentation

- **World economic outlook (the big picture)**
- **Future freight and passenger flows**
- **Opportunities**
- **Infrastructure's contribution**
- **Denmark's infrastructure in relation to the global outlook**
- **Challenges to 2030 and beyond**

World economy – the big picture

- Battered by one of the worst ever recessions
- Deep contraction in advanced economies in 2008-09
- Signs of recovery visible - fragile in OECD countries
- Stronger growth in other parts of world - notably in Asia and Latin America

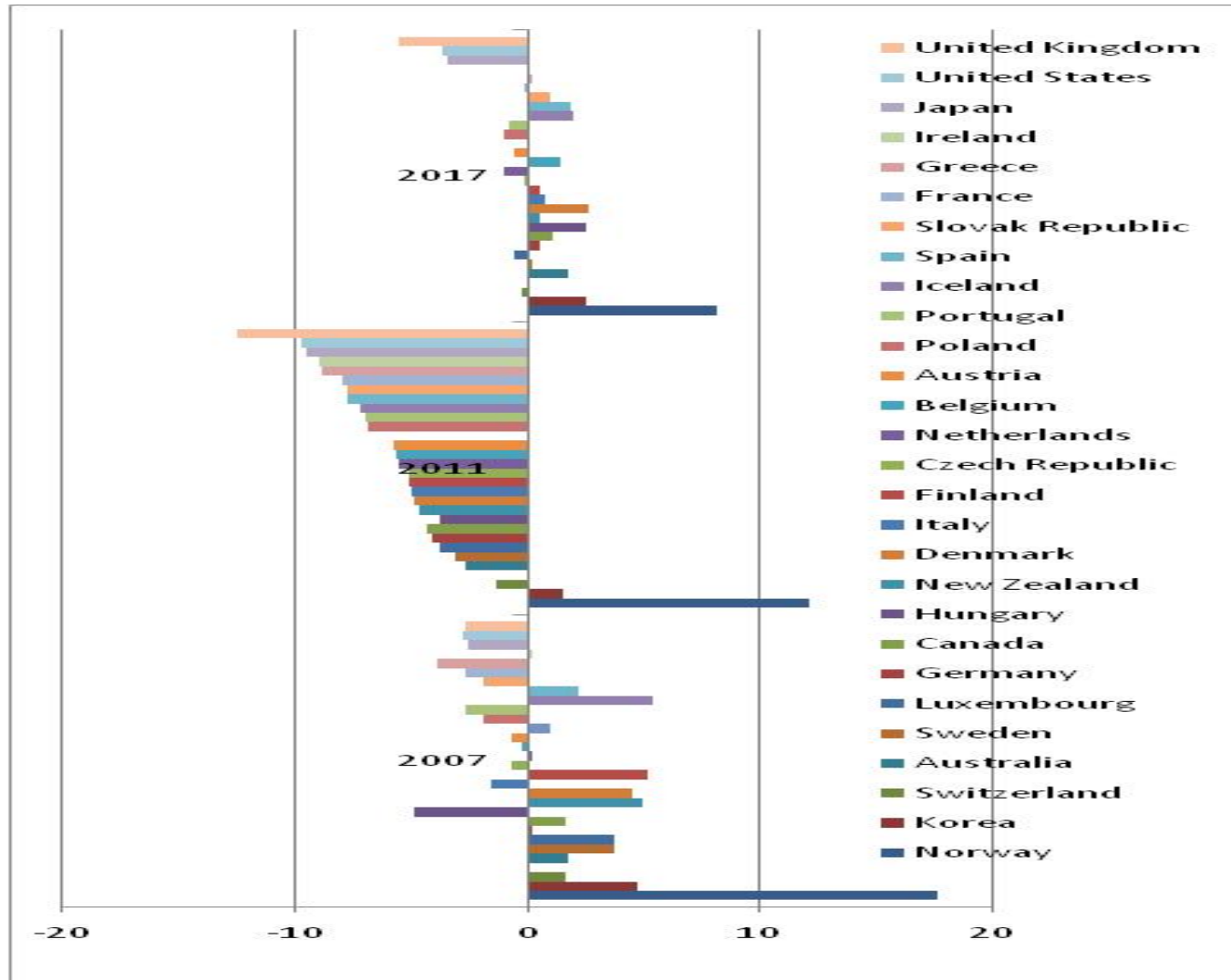


Source: IMF October 2009



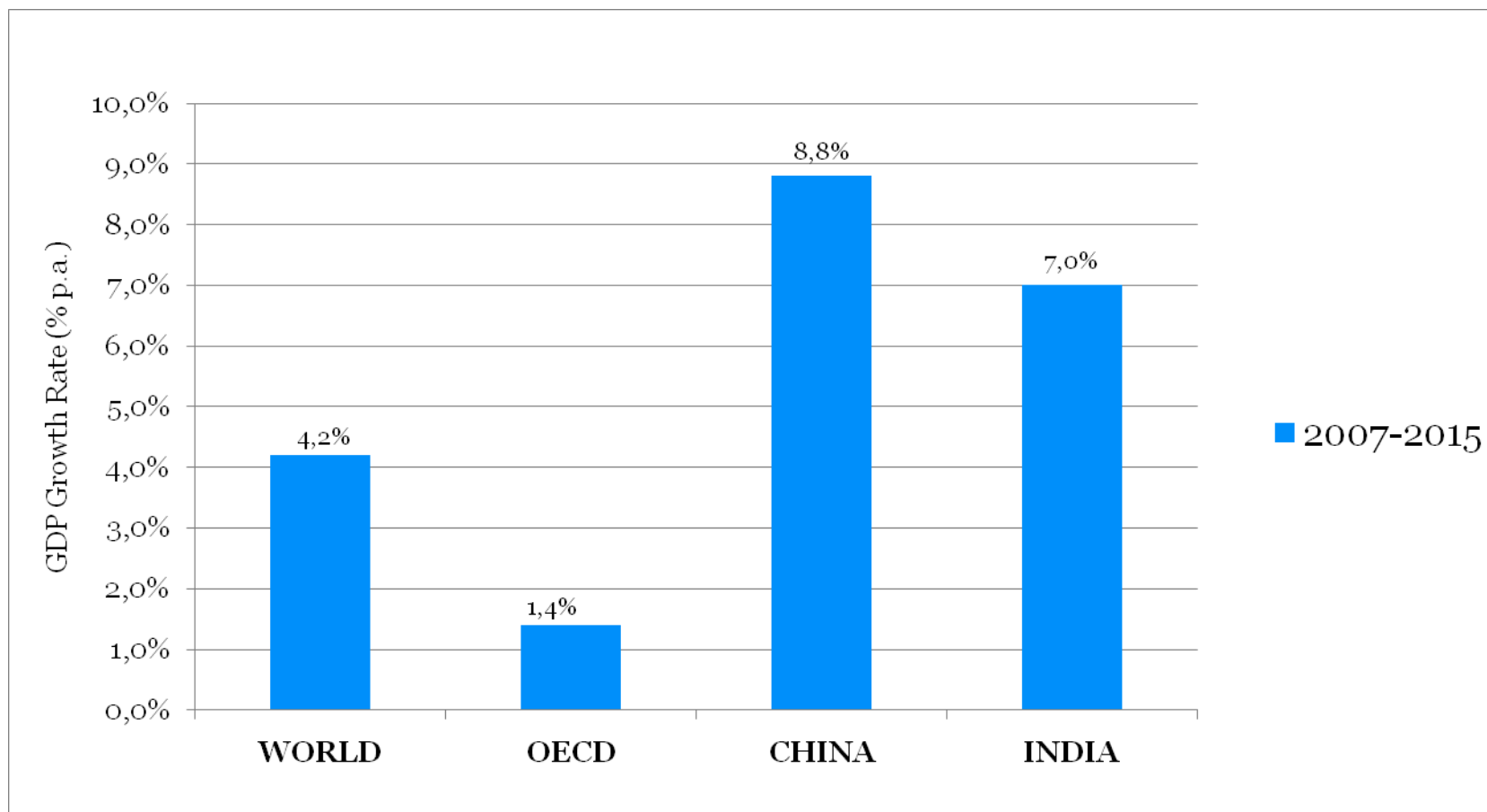
Fiscal Trends (general government fiscal surplus or deficit as a % of GDP)

Source: adapted from OECD Economic outlook, Nr 86





Period to 2015: Stronger growth, but differences around the globe



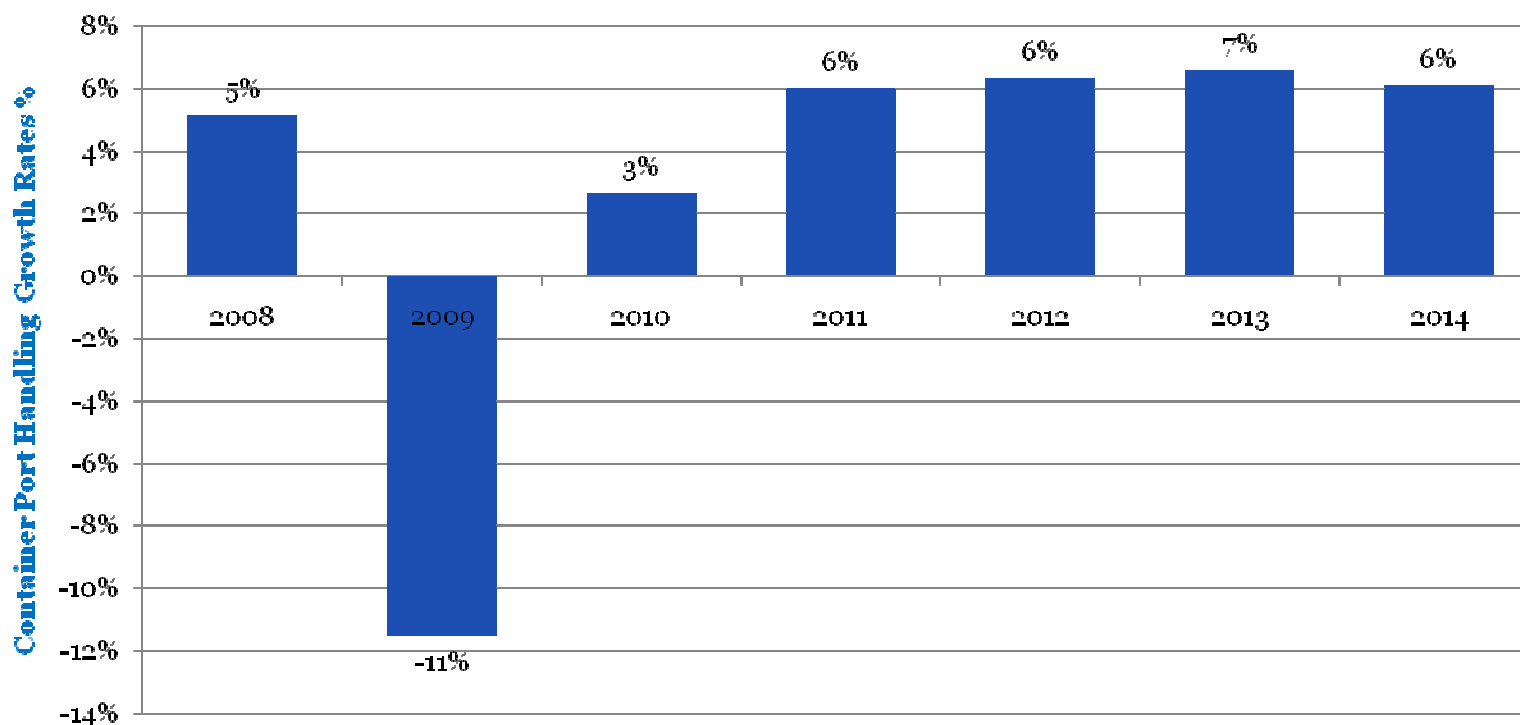
Source: IEA WEO (Nov 2009) for 2007 - 2015 - 2030; IEA ETP (June 2008) for 2030 - 2050

Strong and sustained economic growth in non-OECD countries over next 10+ years



Maritime Outlook – Forecast growth in Container Port Handling to 2014

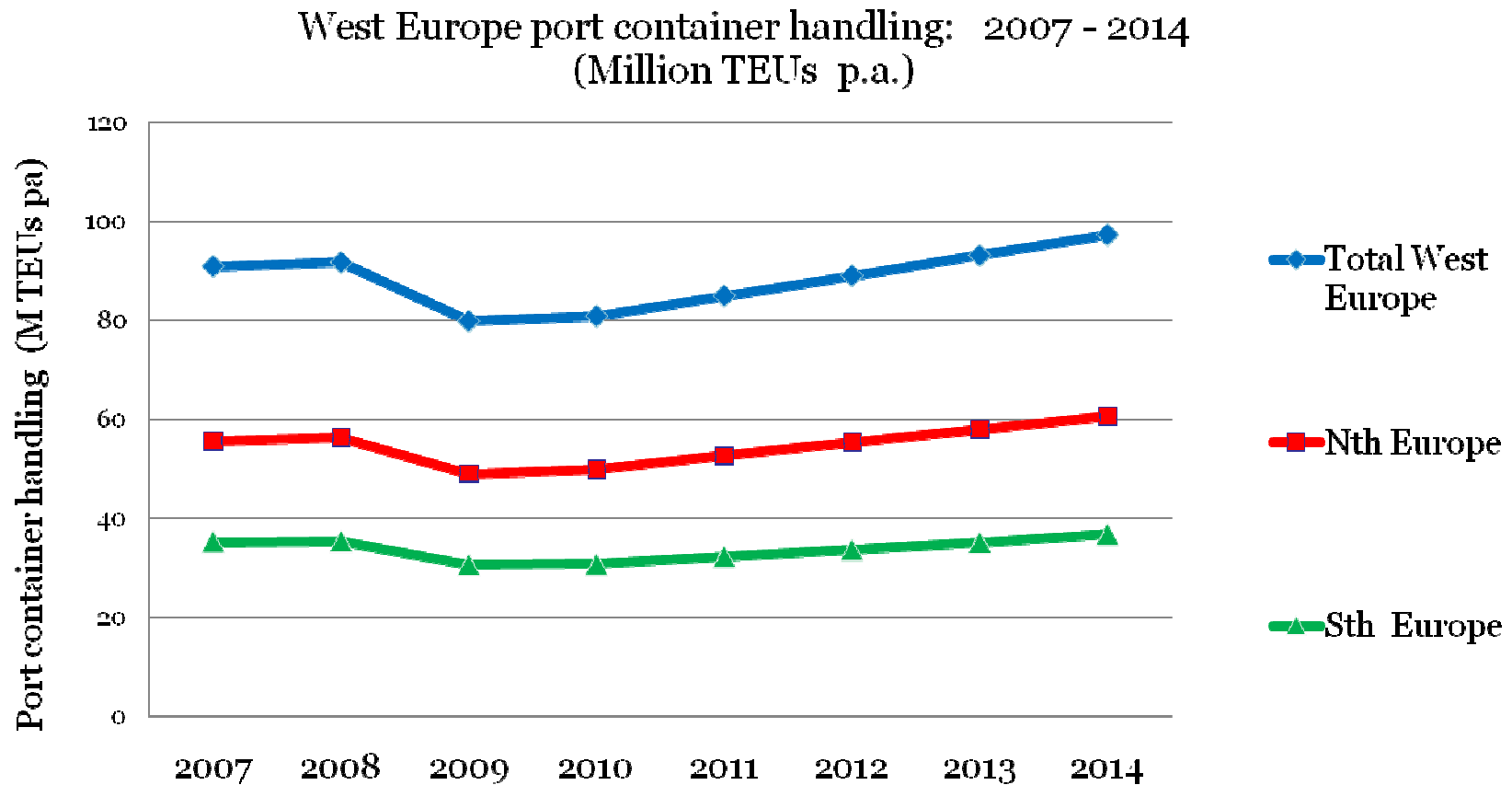
World Container Port Handling - annual growth rates (%)



Source: Drewry, Container Market 2009-10, Oct 2009

Recovery from 2009 fall – but container growth rates below recent trend (>10% pa)

West Europe port container handling to 2014

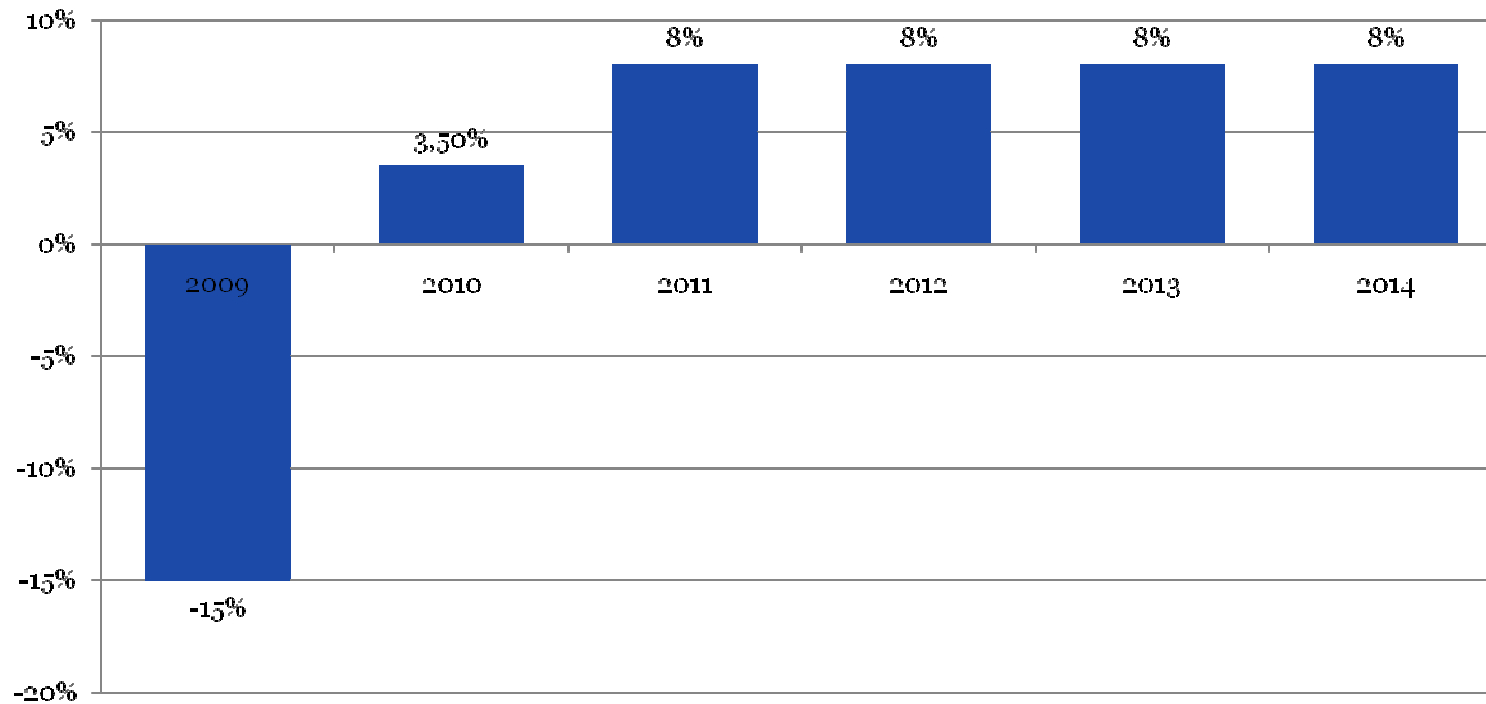


Source: Drewry, Container Market 2009-10, Oct 2009

Growth in West Europe - a little stronger in Northern ports than in the South

Air cargo outlook - growth rates to 2014

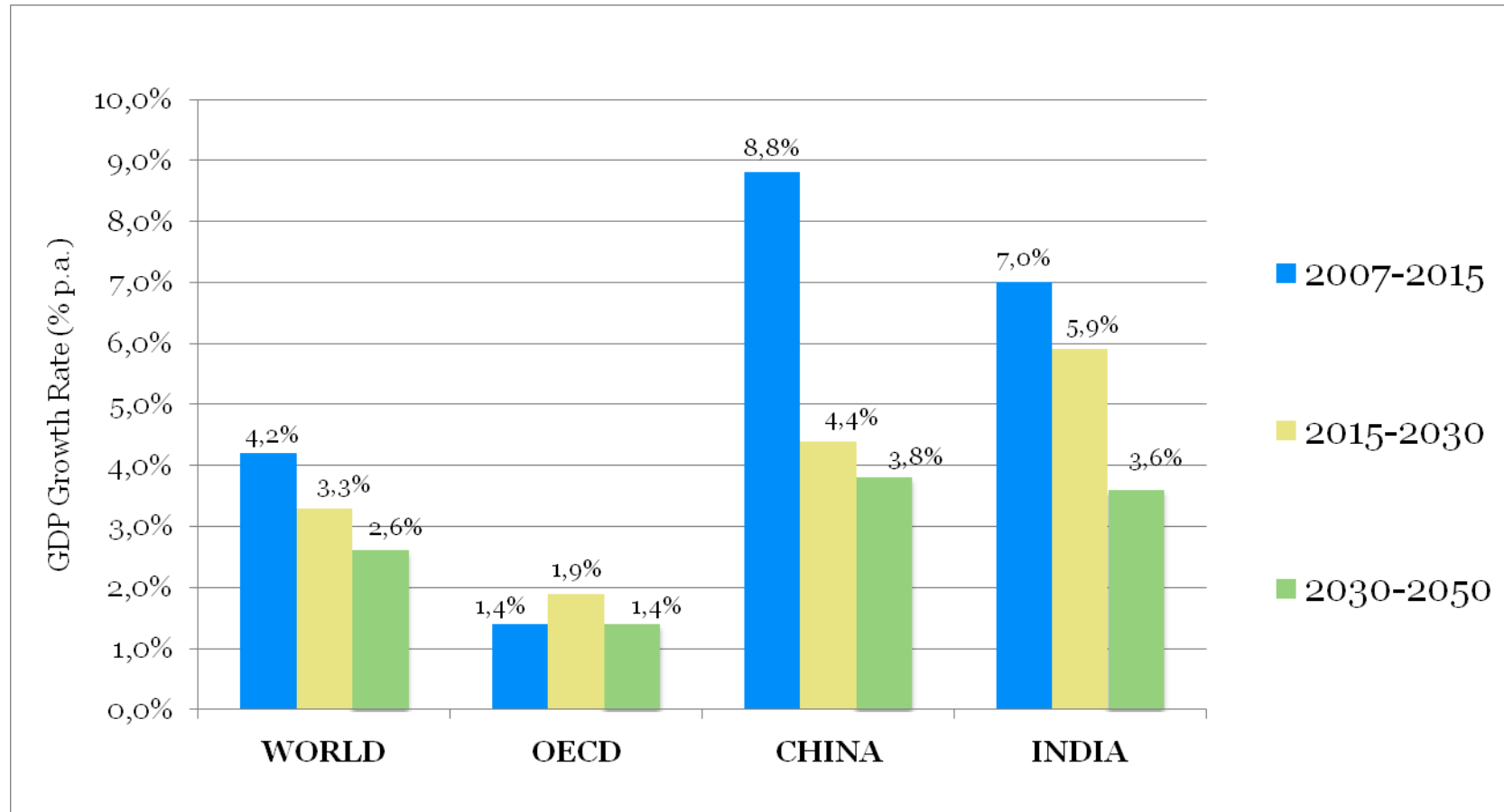
World air cargo – forecast annual growth rates (%)



Source: Airports Council International Aug 2009

Projected Air Freight growth well above av. annual rate of 3.8% p.a. (1999-2008)

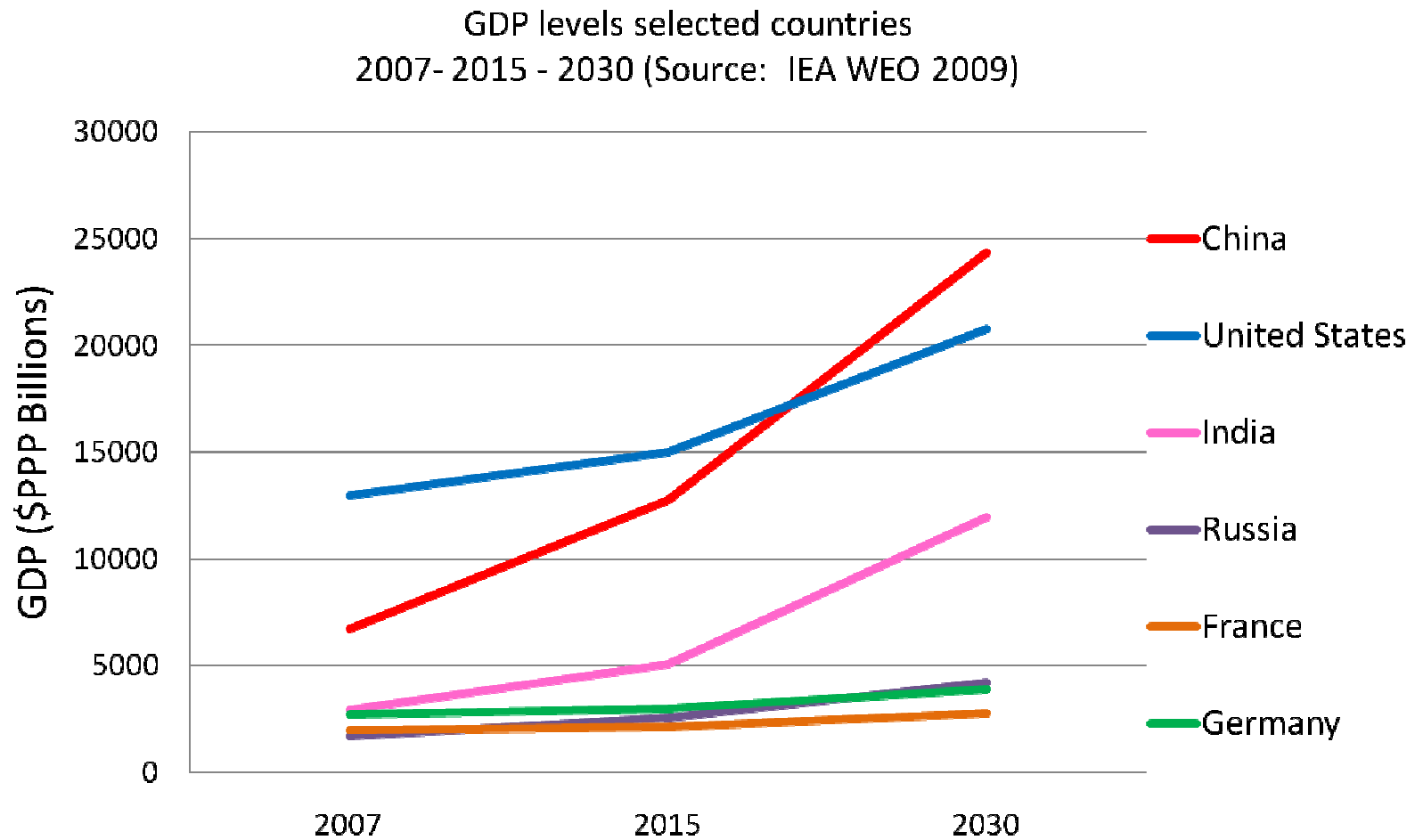
Longer-term growth: differences lessening...



Source: IEA WEO (Nov 2009) for 2007 - 2015 - 2030; IEA ETP (June 2008) for 2030 - 2050

Strong and sustained economic growth in non-OECD countries over next 10+ years

Centre of gravity of world economy shifting East

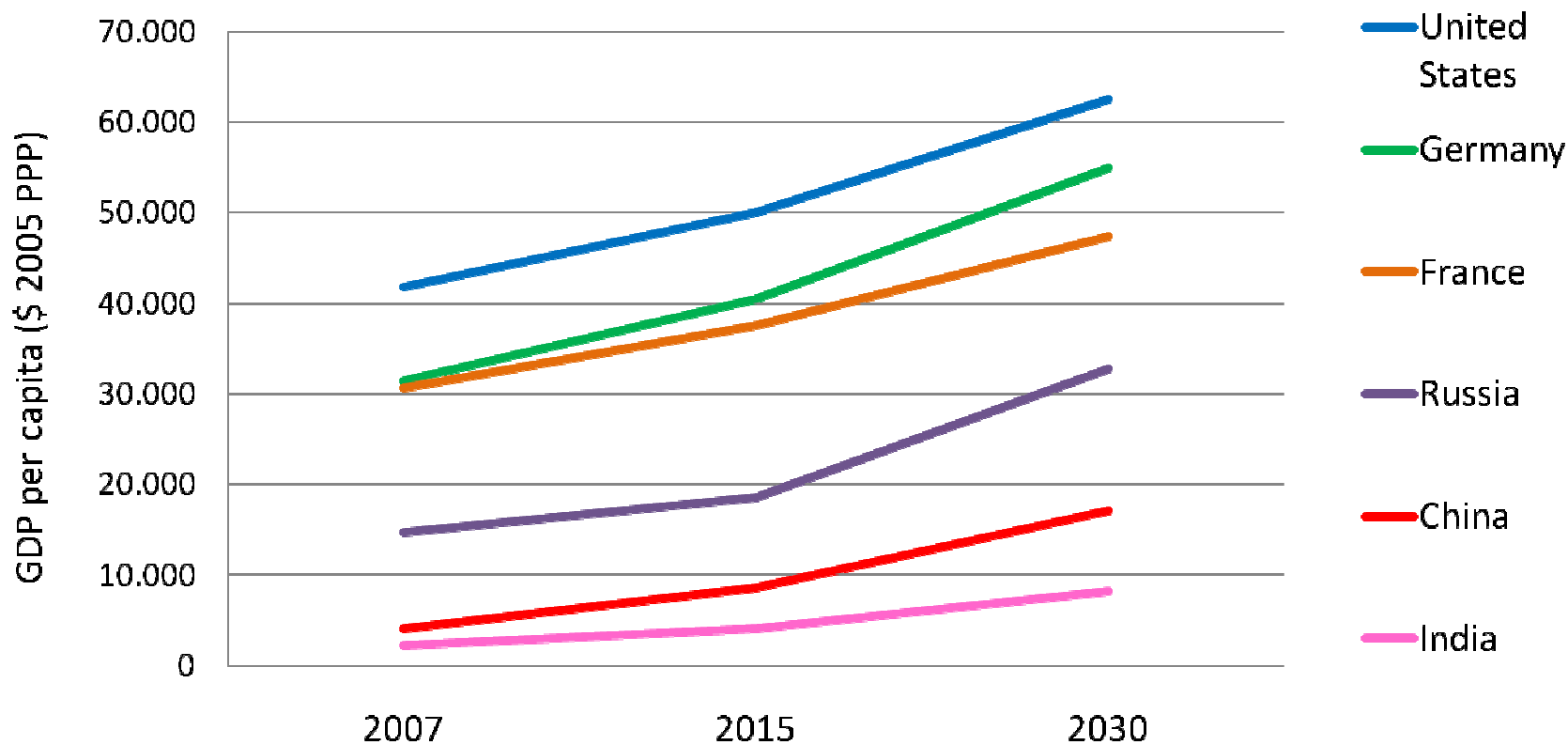


China's GDP overtakes US' before 2025 - with India and Russia growing strongly too



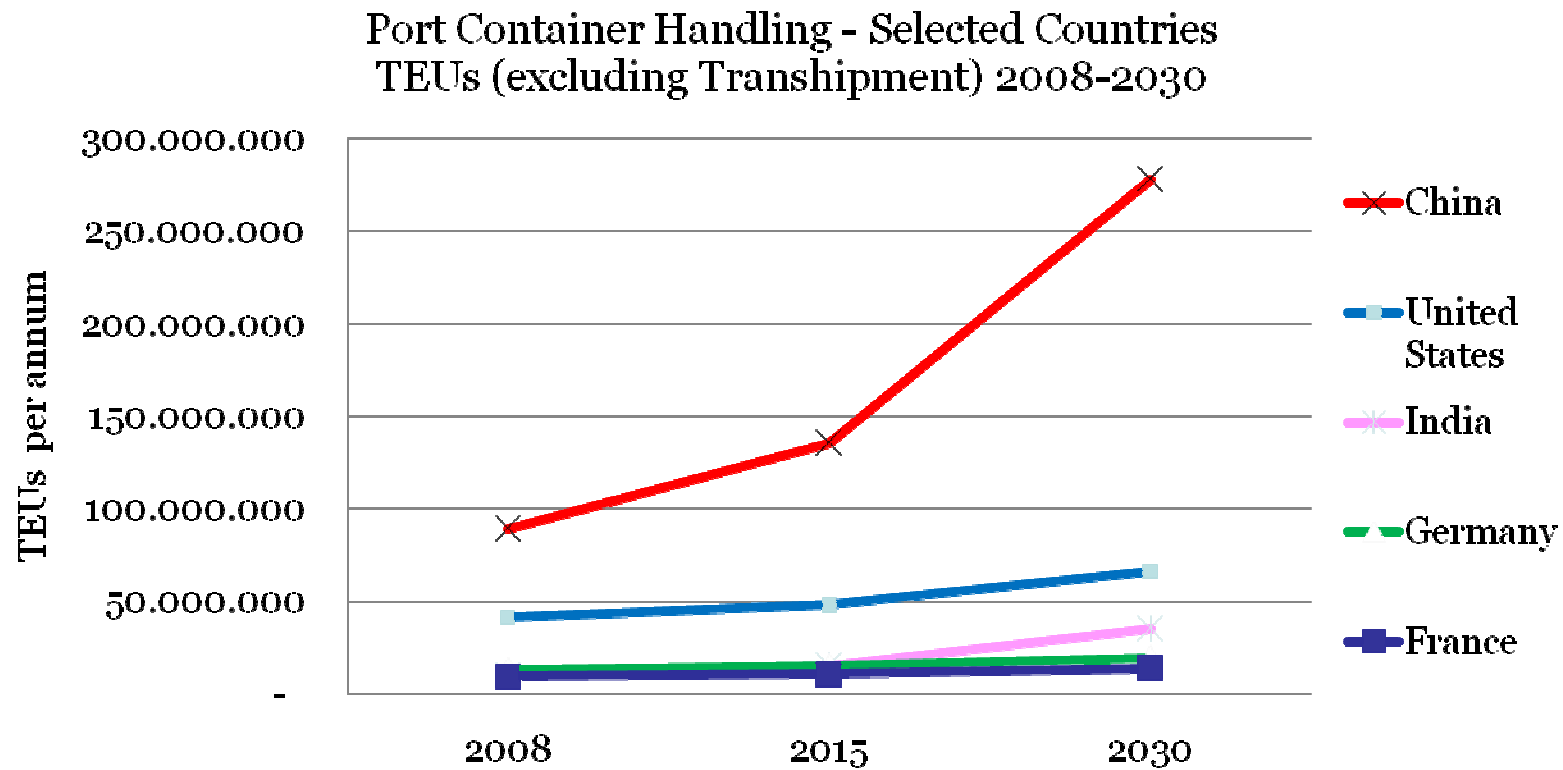
Per capita incomes – economic drivers of freight and passenger flows

GDP per capita growth - selected countries
2007 - 2015 - 2030 (Source: IEA WEO 2009)



Ongoing increases in GDP per capita in OECD countries. Growth rates highest in China

Maritime outlook – Trends in port container handling (TEUs p.a.) 2008-2030

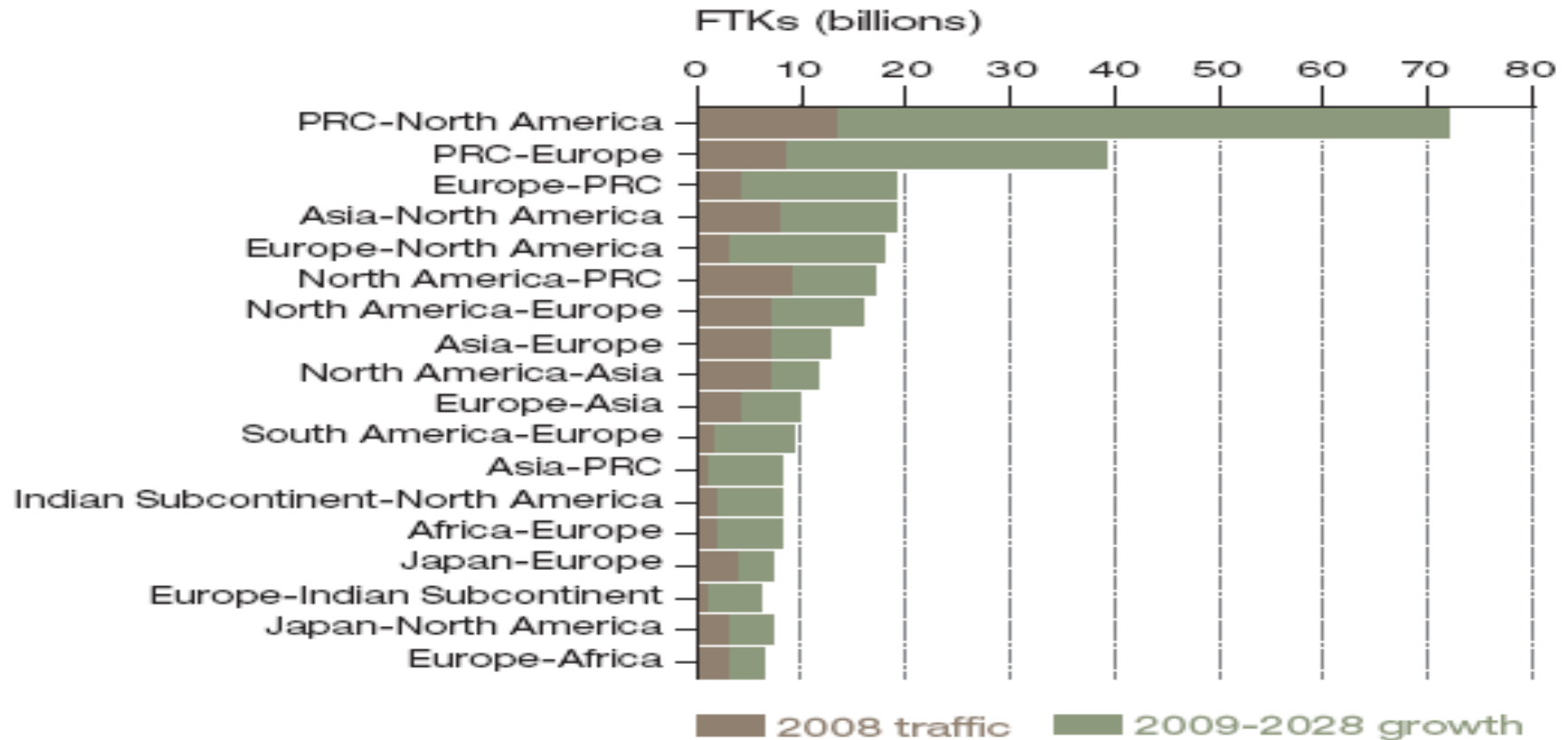


Source: Drewry : Container Market 2009-10 Annual Review and Forecast (to 2015); Project estimates 2015 - 2030

Largest GDP-related volume increases in China followed by India and the US

Longer term – air cargo flows & growth to 2028

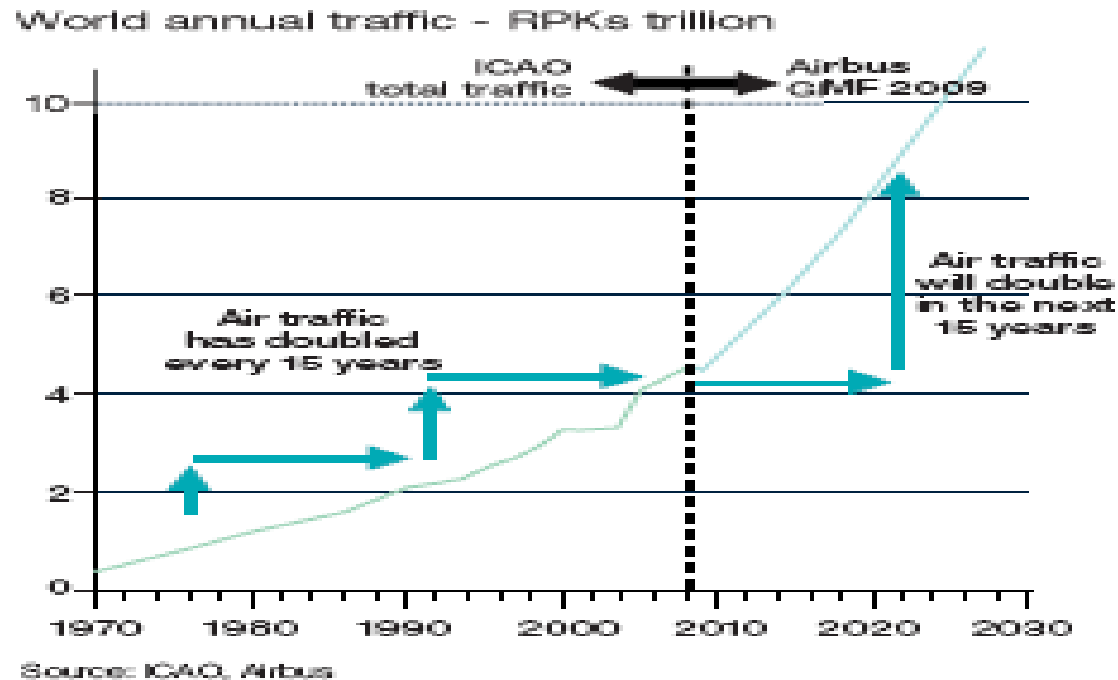
Airbus Projections – Largest air cargo routes / flows



Source: Airbus GMF 2009

Air freight traffic is expected to triple in 20 years—growth rate 5.2% (cf. 3.8% 1998-2008)

Air passenger outlook—trends & projections to 2030



Source: Airbus GMF, Oct 2009

Airbus projects air passenger traffic will double in 15 years – as it has in the past

Opportunities

- Increasing trade as global demand doubles 2030
- Growth opportunities include:
 - Asia (China/India) and Latin America
 - Russian Federation, and
 - resource-based growth in the Baltic /High North
- Export opportunities (subject to *competitiveness*)
 - cruise and eco-tourism (with ageing population)
 - transport services/container growth (eg Maersk)
 - services / low carbon / 'green growth' industries
 - niche markets for high technology manufactures.



Quality Infrastructure - one of several key pillars of competitiveness

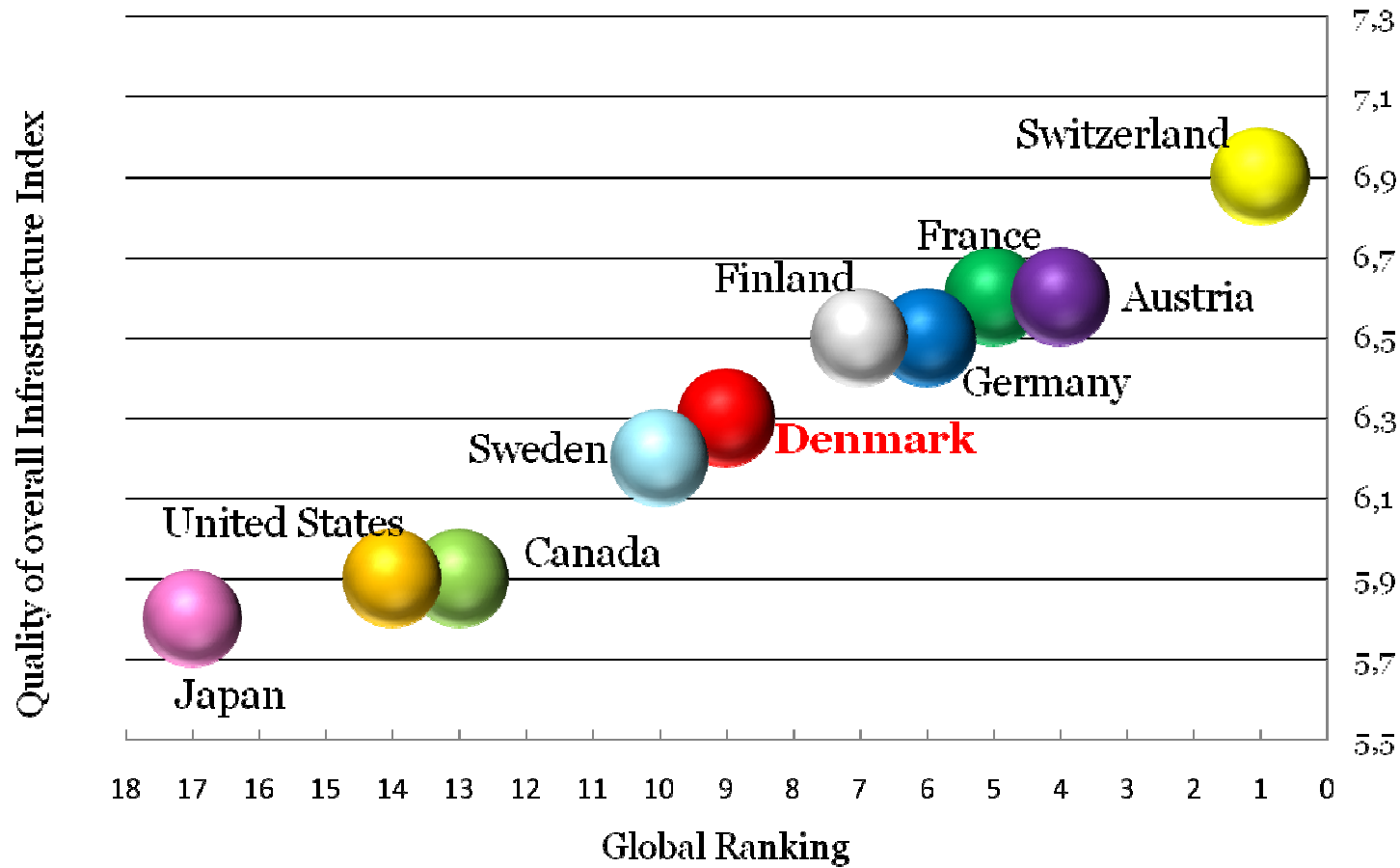
- **Infrastructure- essential driver of competitiveness**
 - critical for effective functioning of the economy
 - important for the location and kinds of activities or sectors that can develop.
- **Well-developed infrastructure reduces the effect of distance between regions, connecting it at low cost to markets in other countries and regions.**
- **The quality and extensiveness of infrastructure networks significantly impact economic growth**



Denmark's infrastructure in the global context

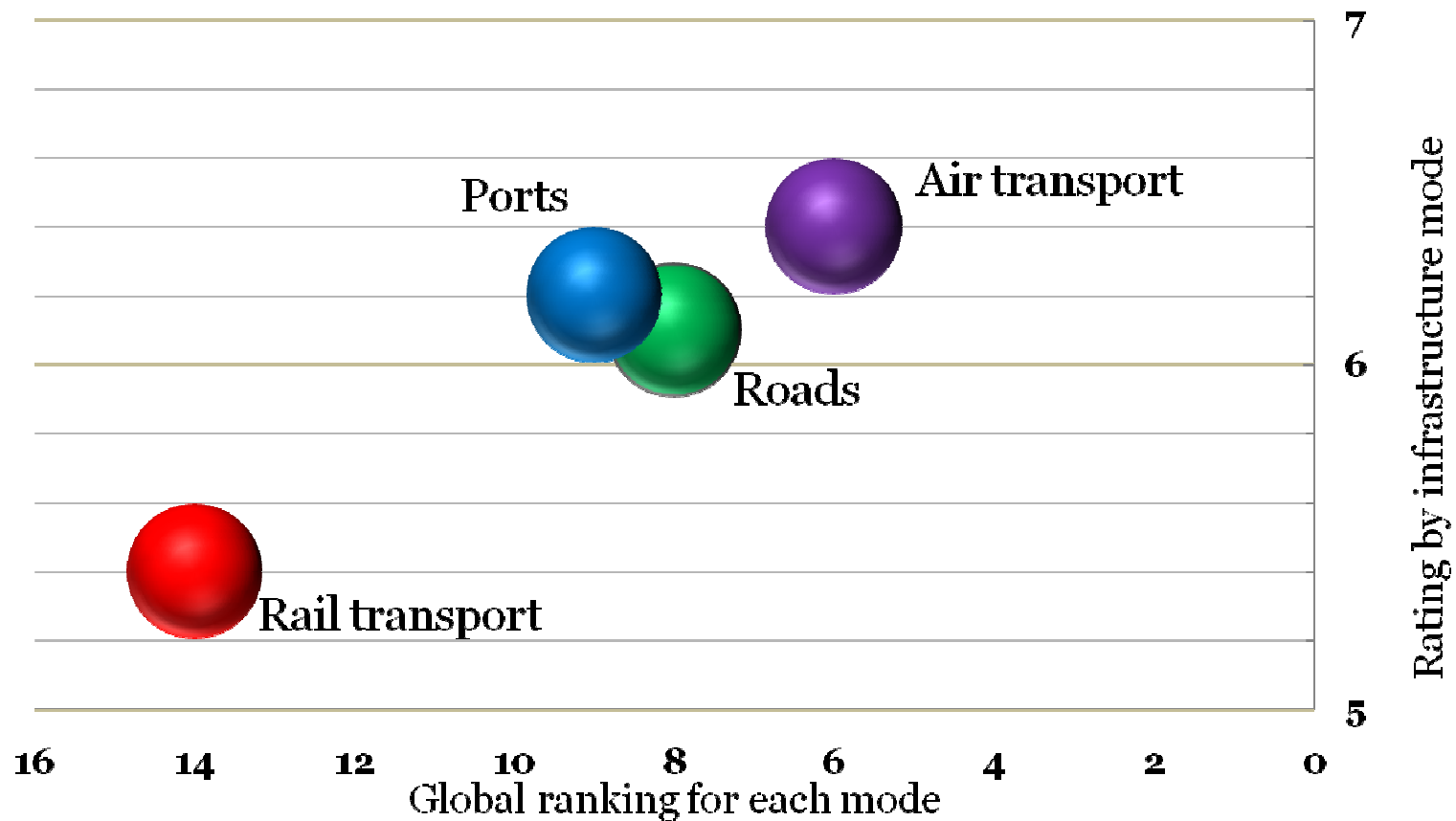
Overall infrastructure quality

Denmark's global ranking – 9th



Source: Global Competitiveness Report 2009-10, World Economic Forum, 2009

Denmark's infrastructure quality by mode



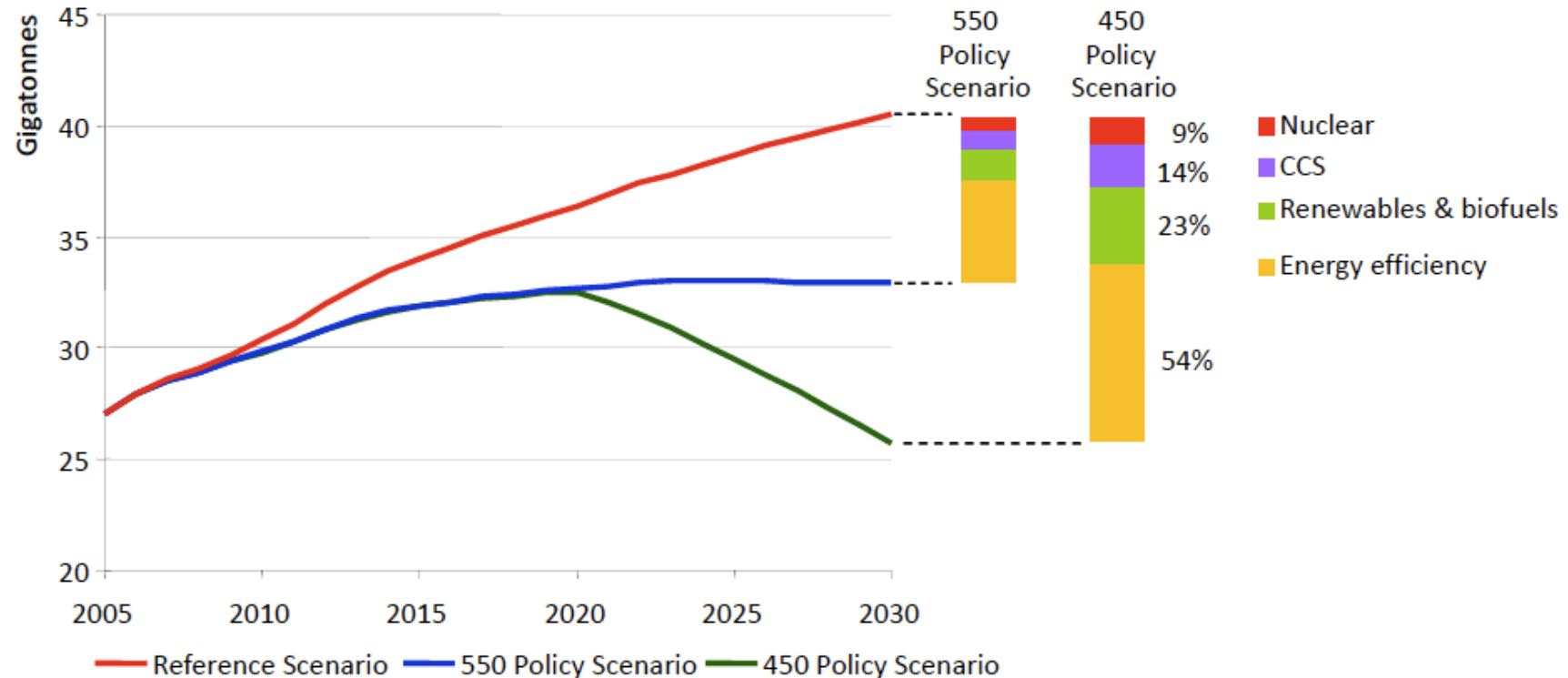
Source: Global Competitiveness Report 2009-10, World Economic Forum, 2009

Fit for the long run?

- **Investment programme to 2020 – historically high levels**
 - **Fehmarn Belt - bridge and related rail links**
 - **New Metro Circle Line**
 - **Modernisation of rail network and new rail corridors**
 - **Expansion of most congested road corridors in Copenhagen Region and East Jutland**
- **But numerous challenges beyond 2020.....**



How to improve competitiveness in a higher resource cost / low carbon / “green growth” environment?

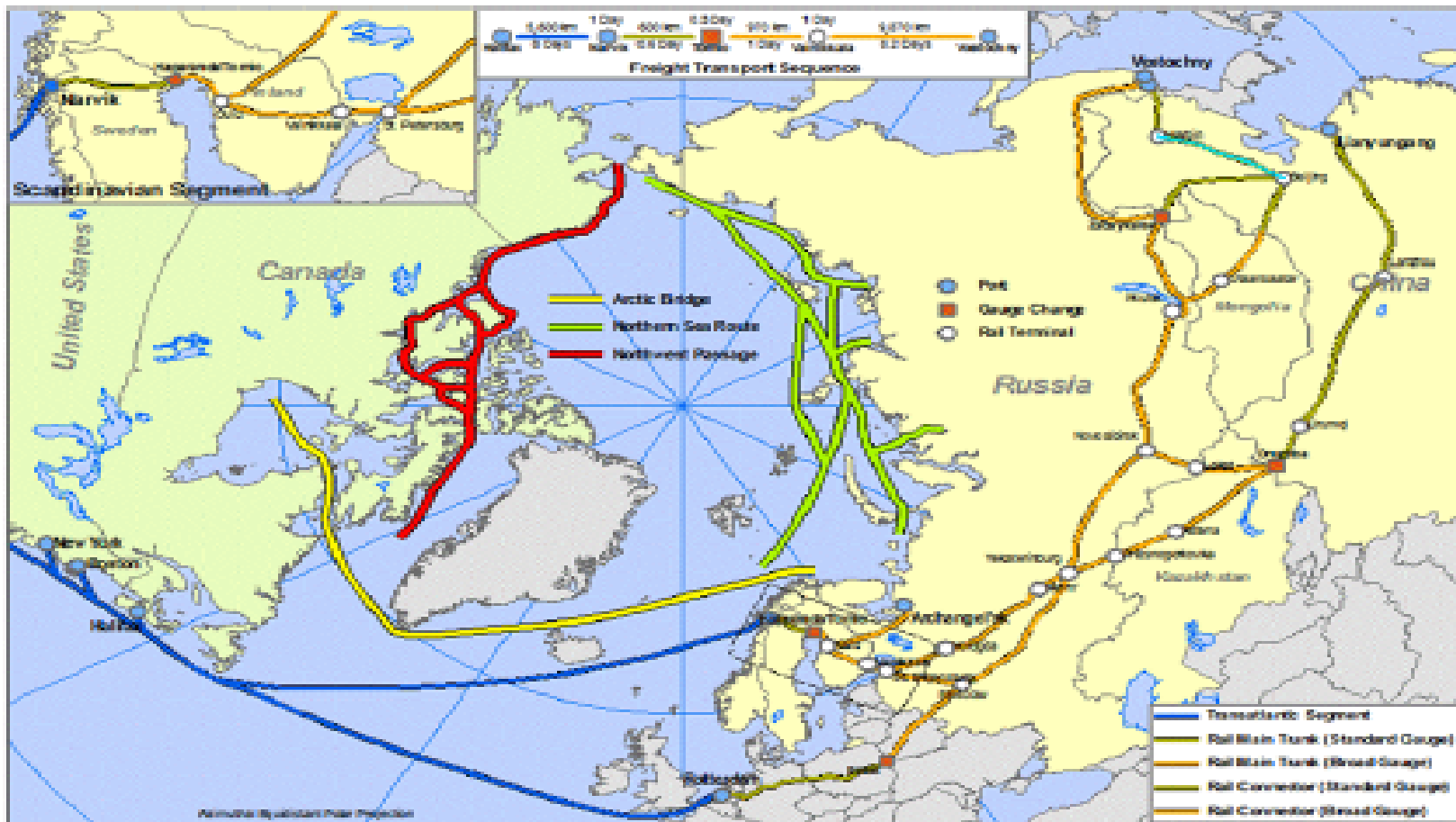


About 25% of world-wide CO2 emissions are attributable to transport. Transport CO2 emissions are projected to increase by nearly 40% by 2030 – and more than 80% by 2050... Efficiency gains and deployment of existing low carbon energy account for most of the savings.

Source: IEA World Economic Outlook November 2009; IEA Transport Energy and CO2 October 2009.

Emergence of new trade routes: what impact on trade flows, gateways and infrastructure requirements?

Alternative east-west trade routes



Source: Rodrigue, Hofstra University



What scope for more use of intelligent transport systems on existing infrastructures?

Pushing the frontiers further in:

- Programmes that keep the road network at maximum/optimal capacity during peak periods
- Road network pricing..setting incentives?
- Intelligent ICT-driven public transport management schemes
- Enhanced signalling and improved freight rail cargo capacity
- Use of GIS codes to facilitate life-cycle management of infrastructure assets...
- Etc.



What scope for more innovative approaches to finance?

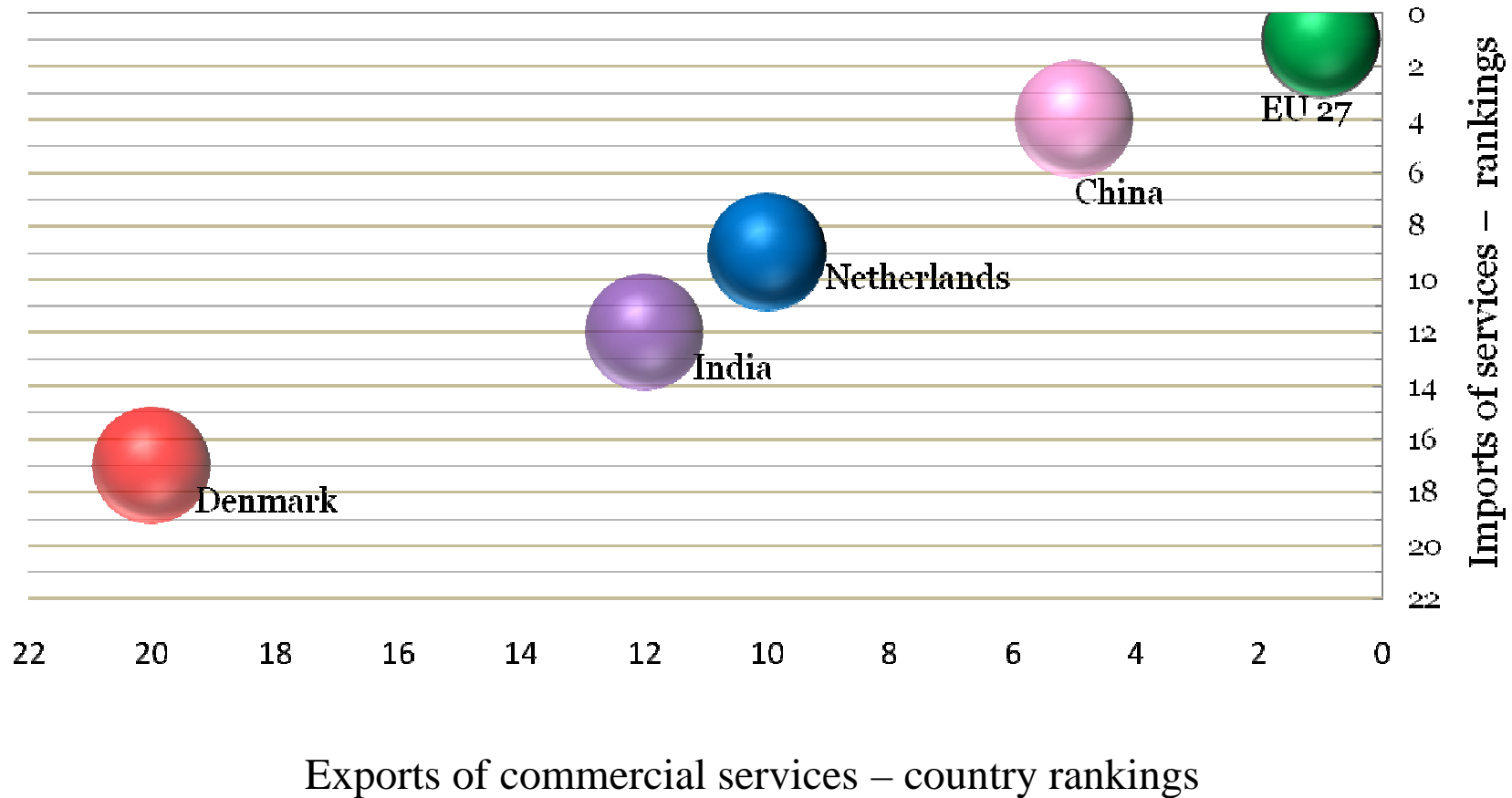
- Fiscal consolidation to 2017...?
- Growing expenditures on health, pensions, long-term care to 2050...

Options:

- Diversify and expand traditional revenue-raising sources?
- Make greater use of user charges for funding infrastructures.?They should be designed to signal prices, reflect real costs and contribute to demand management.
- Engage the private sector?
- Encourage public private partnerships (PPPs) as a means of raising additional financing for infrastructure investment and diversifying business models?
- Encourage the investment of pension funds and other large institutional investors in infrastructures.?

How to maintain export competitiveness as other countries and regions develop more rapidly?

(World trade in commercial services – country rankings)



Source: UN World Trade Organization, March 2010



Thank you

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