

TRANSPORT – THE NEXT 50 YEARS
Christchurch Convention Centre
25-27 July 2007

« *What can we learn from the last 50 years?* »

Jack Short
Secretary General
International Transport Forum

www.internationaltransportforum.org

www.cemt.org

Structure

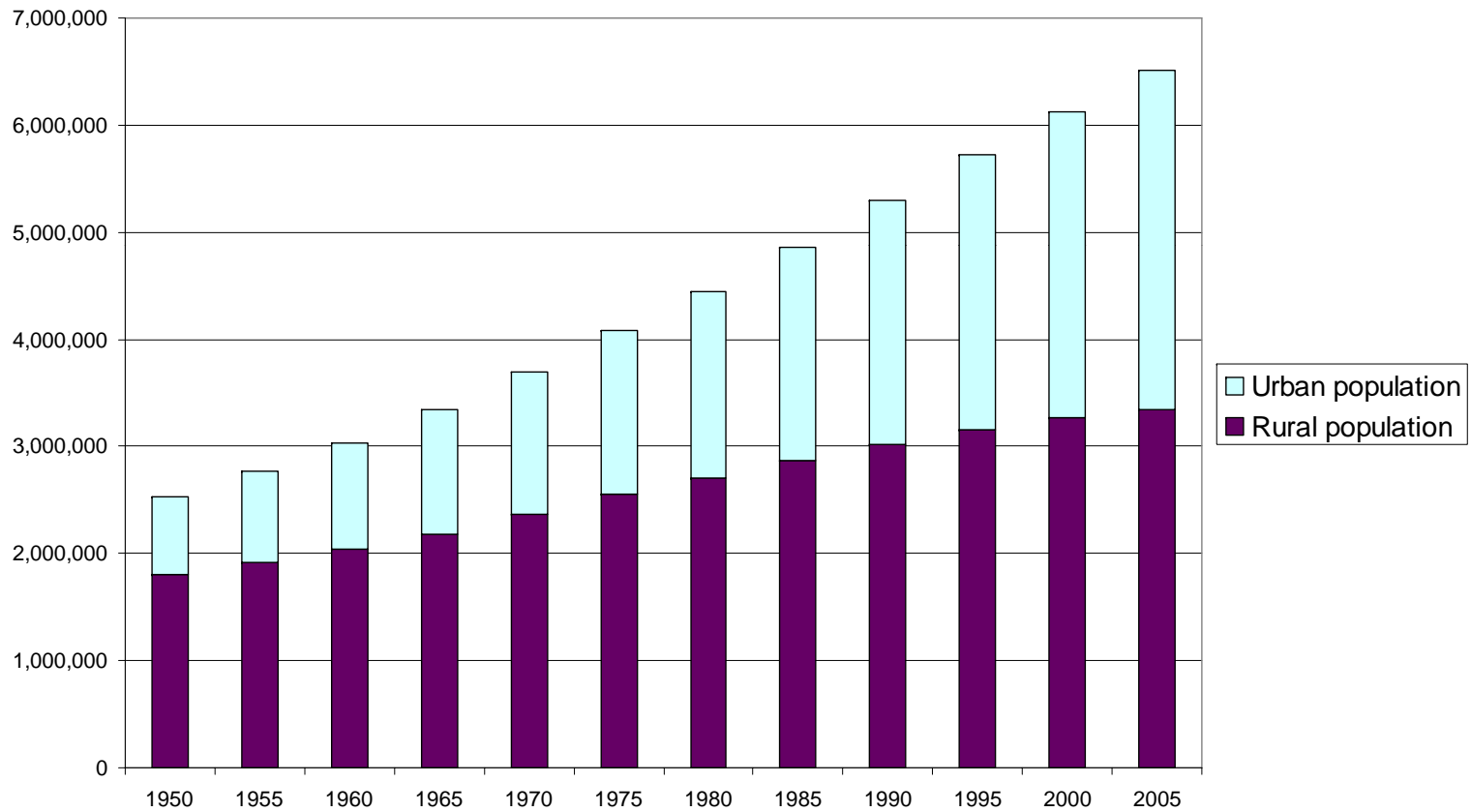
- Look Back
- Look Forward
- Lessons

Looking Back

Since 1950:

- World population x 2.5
- Urban population x 4

World population 1950-2005 (thousands)



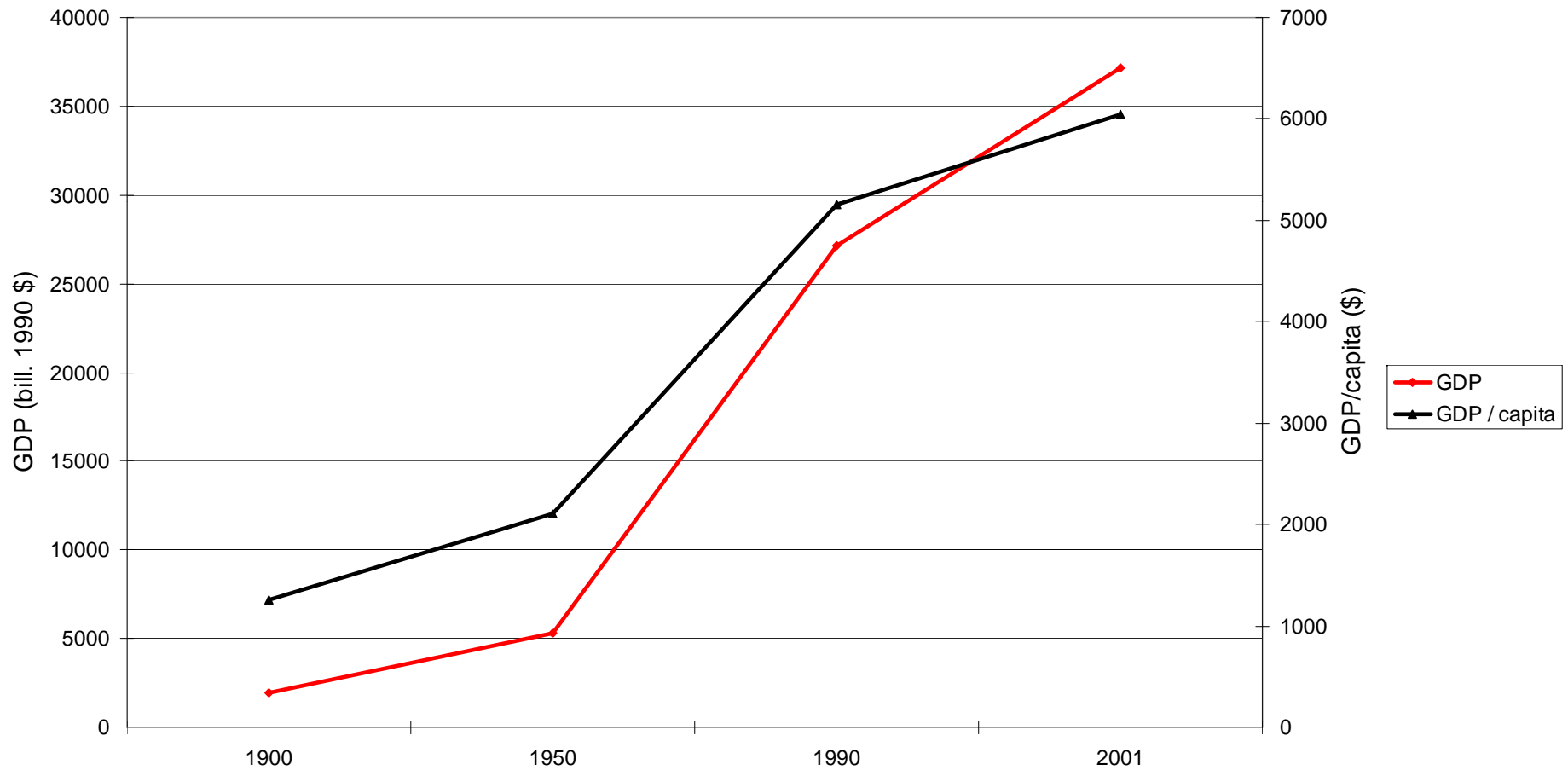
Source: United Nations Population Division

Looking Back

Since 1950:

- World population x 2.5
- Urban population x 4
- World GDP x 8
- GDP / capita x 3

World GDP and GDP/capita



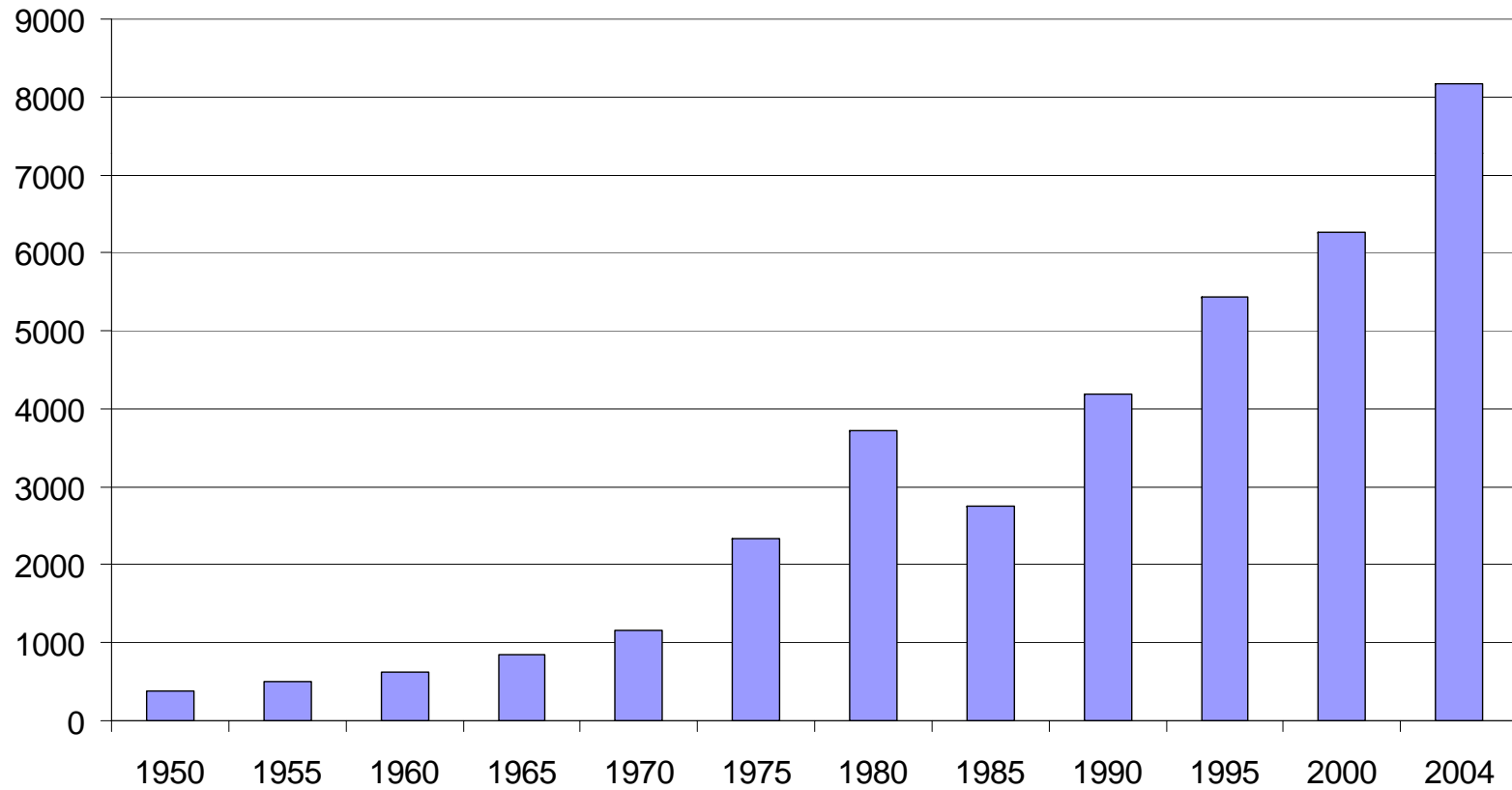
Source: Maddison (2005)

Looking back

Since 1950:

- World population x 2.5
- Urban population x 4
- World GDP x 8
- GDP / capita x 3
- World trade x 20

World trade (billion 2000 US\$)



Source: Hummels (2006)

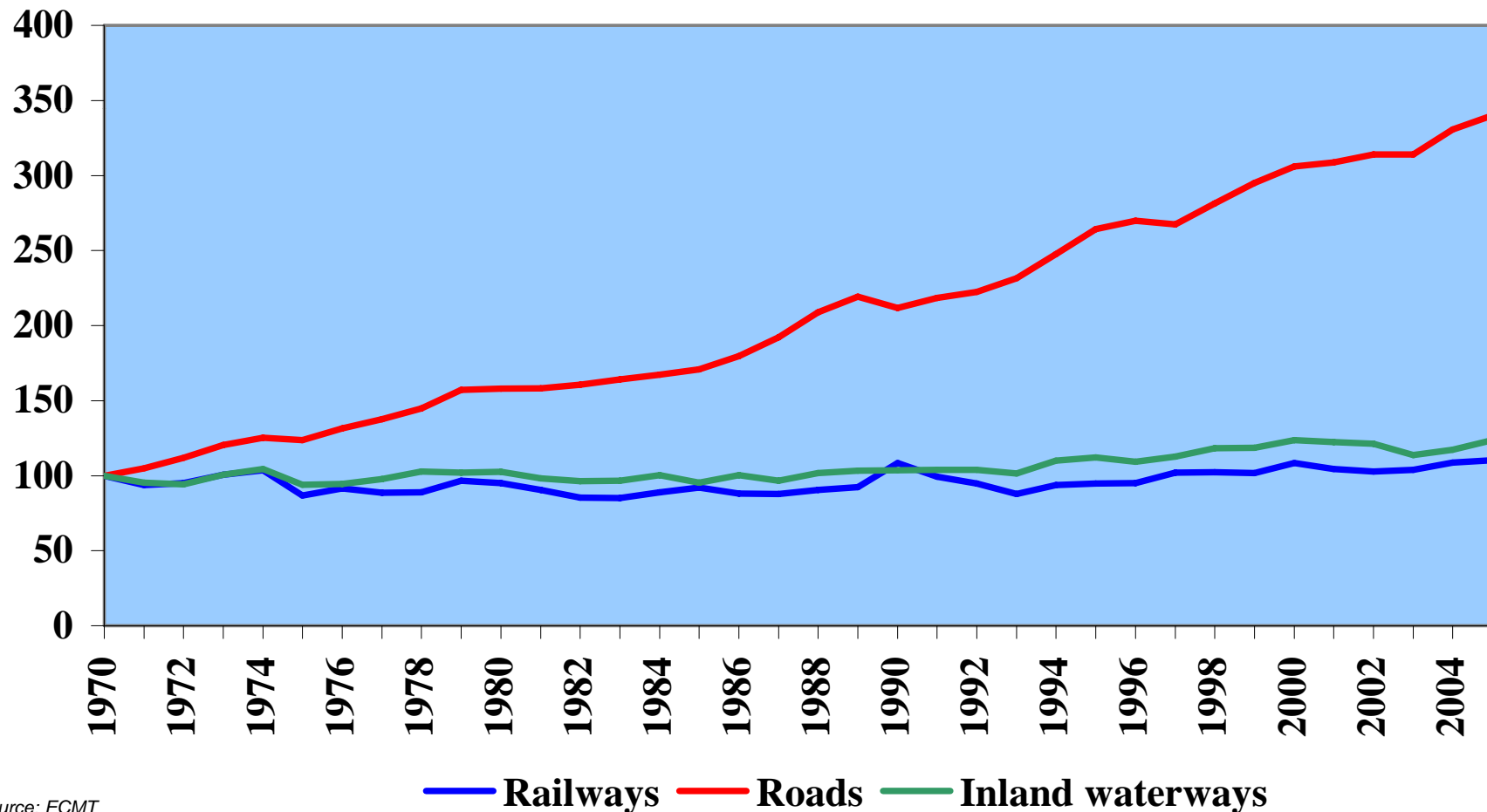


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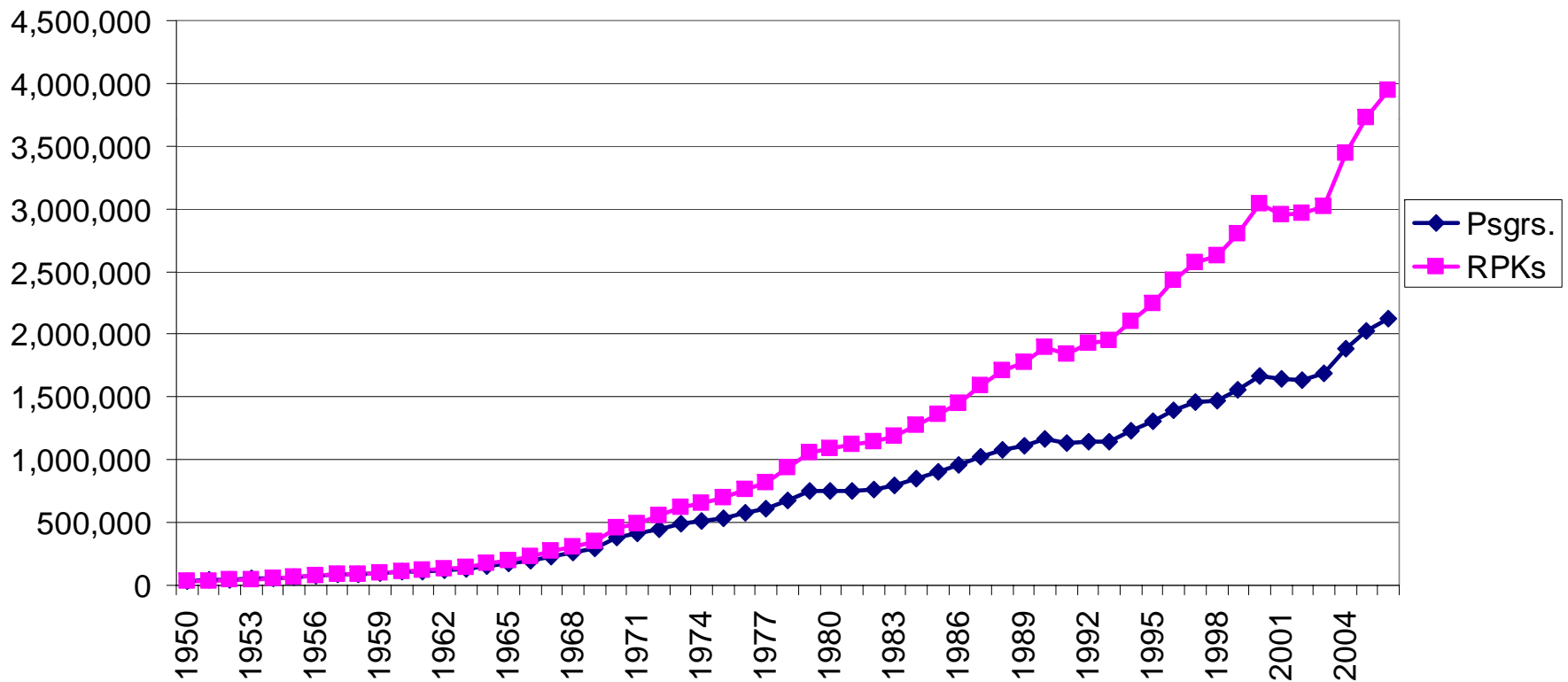
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- Mobility increased and altered (longer trips, more leisure trips, more by road and air)

Freight transport trends (tonne-kilometers) Western European countries 1970=100



Annual traffic: World airlines (Number of passengers and million passenger-km)



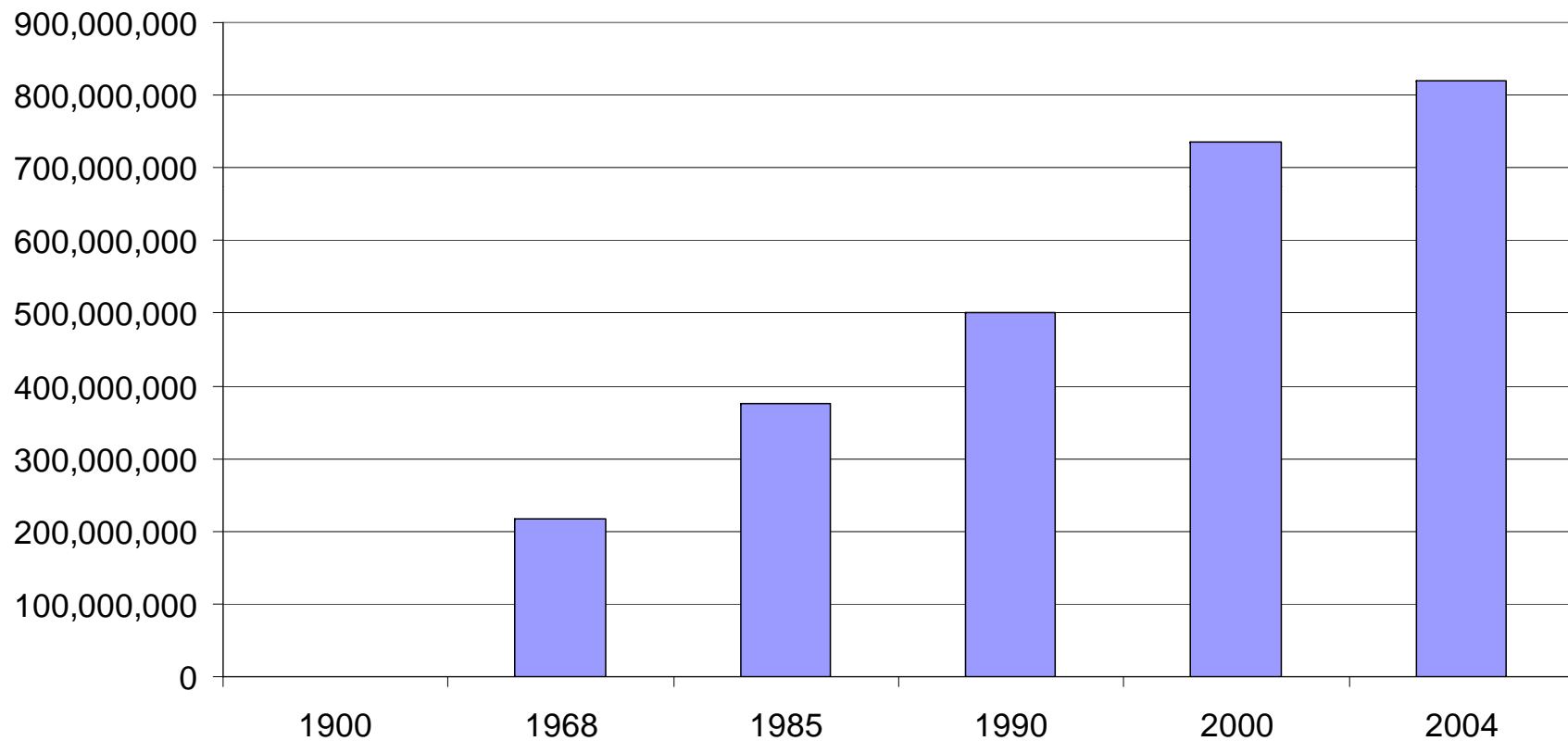
Source: ICAO

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- Number of cars x 4 since the 1960s



Number of Cars in the World





Major Productivity Increases

- Technology: Cars/Trucks/Aircraft/Ships/Trains
 - Improved reliability, faster speeds, bigger sizes.
- Containers revolutionised freight transport

Growth in containership size

Year	Average ship size (TEU)	Largest ship in world fleet (TEU)
1980	975	3057
1990	1355	4409
2000	1741	7200
2006	2300	11500

Emma Maersk. August 2006



Efficiency of terminal handling operations

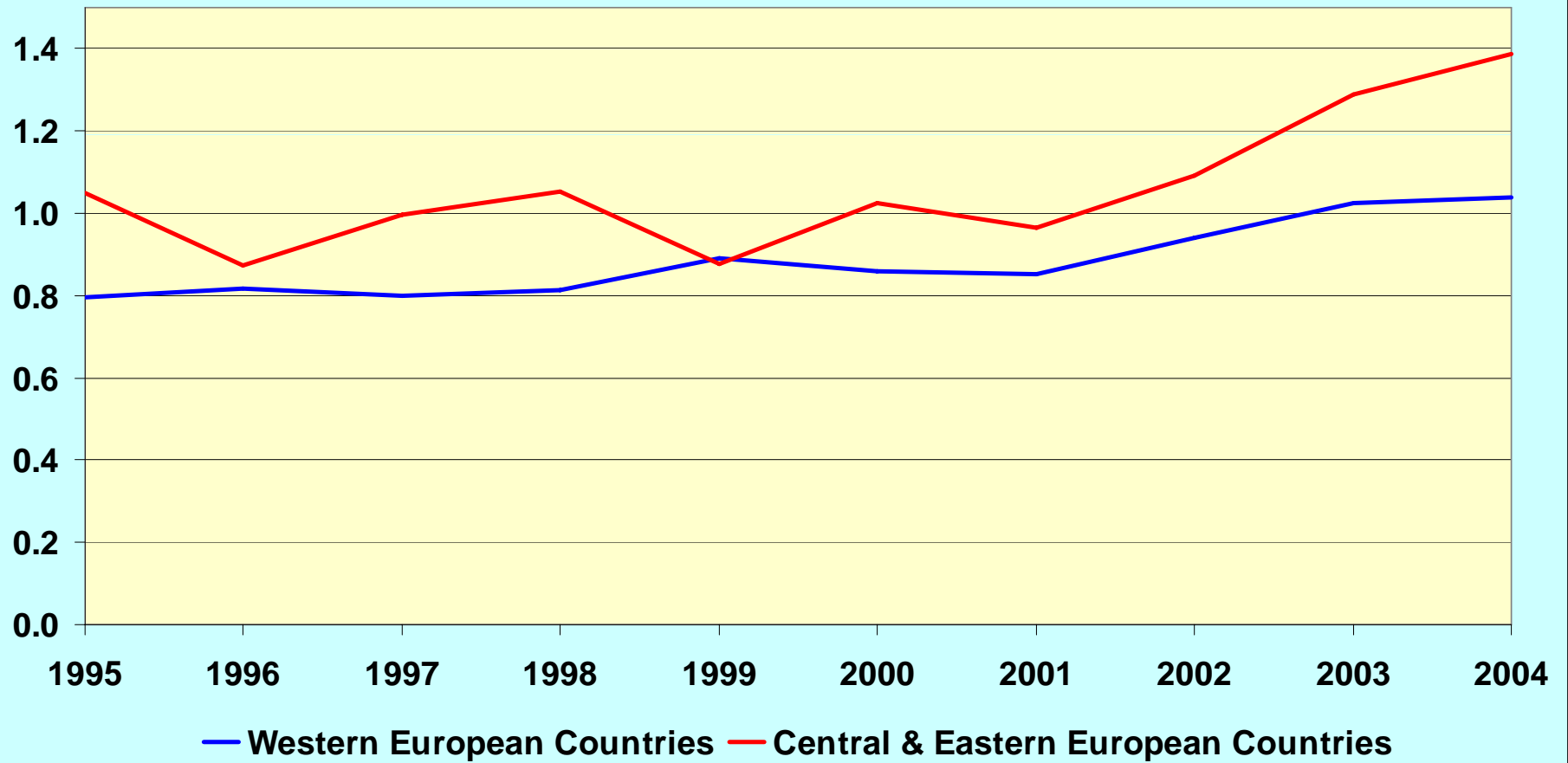




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Inland Transport Infrastructure Investment as a percentage of GDP



Source: ITF database



Major Productivity Increases

- Technology: Cars/Trucks/Aircraft/Ships/Trains
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- **Costs/ prices declined.**

Reduction in costs

- **Sea freight**

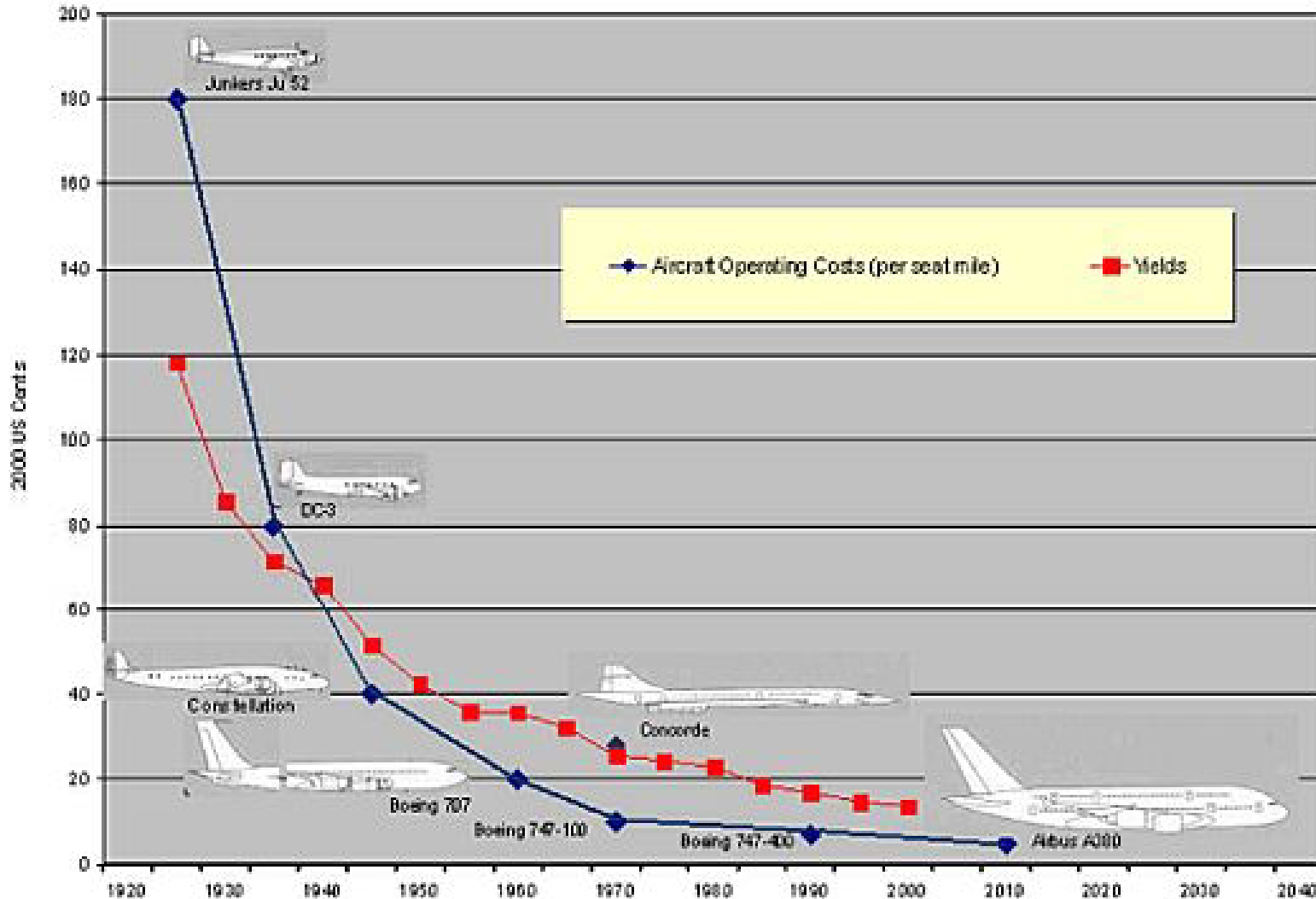
Unit cost on the North Atlantic in 2002:

- 1200 TEU ship: 550 US\$ per unit
- 6500 TEU ship: 240 US\$ per unit

- **Air freight**

- 1995: 3.9 \$ per tonne-km
- 2004: 0.3 \$ per tonne-km

Aircraft operating costs per seat mile



Source: World bank



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- Technology: Cars/Trucks/Aircraft/Ships/Trains
 - Improved reliability, faster speeds, bigger sizes.
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AND

Dramatic reductions in crashes and pollution

Summary - looking back

Transport system is now

- Faster
- Cheaper
- Safer
- Cleaner
- More efficient than ever

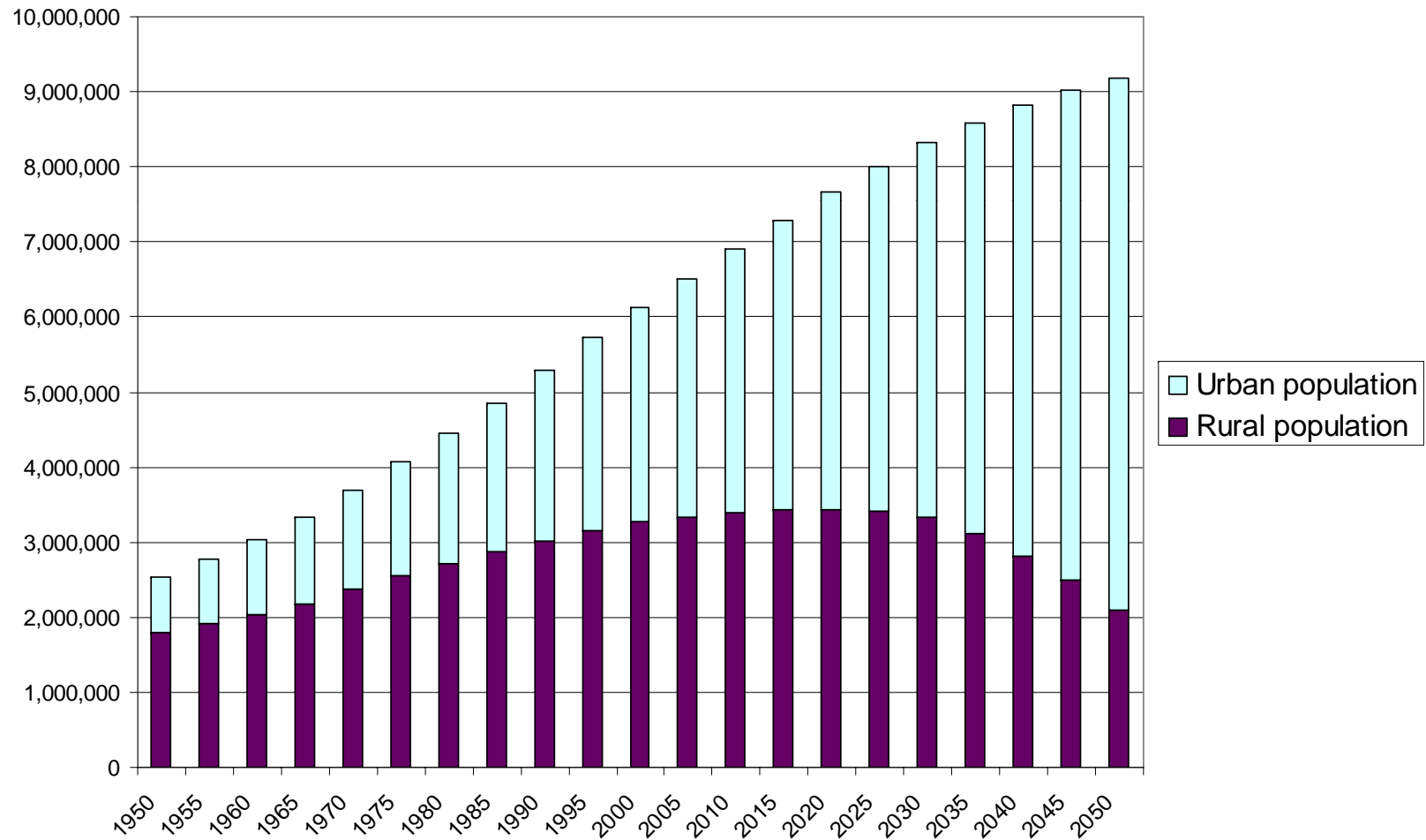
But, still

- too dirty (3 billion tonnes of CO₂)
- too unsafe (over 1 million road deaths)
- too inefficient (protectionism, closed markets)
- Often too expensive

Looking Ahead

- World population grows to 9 billion by 2050 with 7 billion in cities

World population 1950-2005 (thousands)



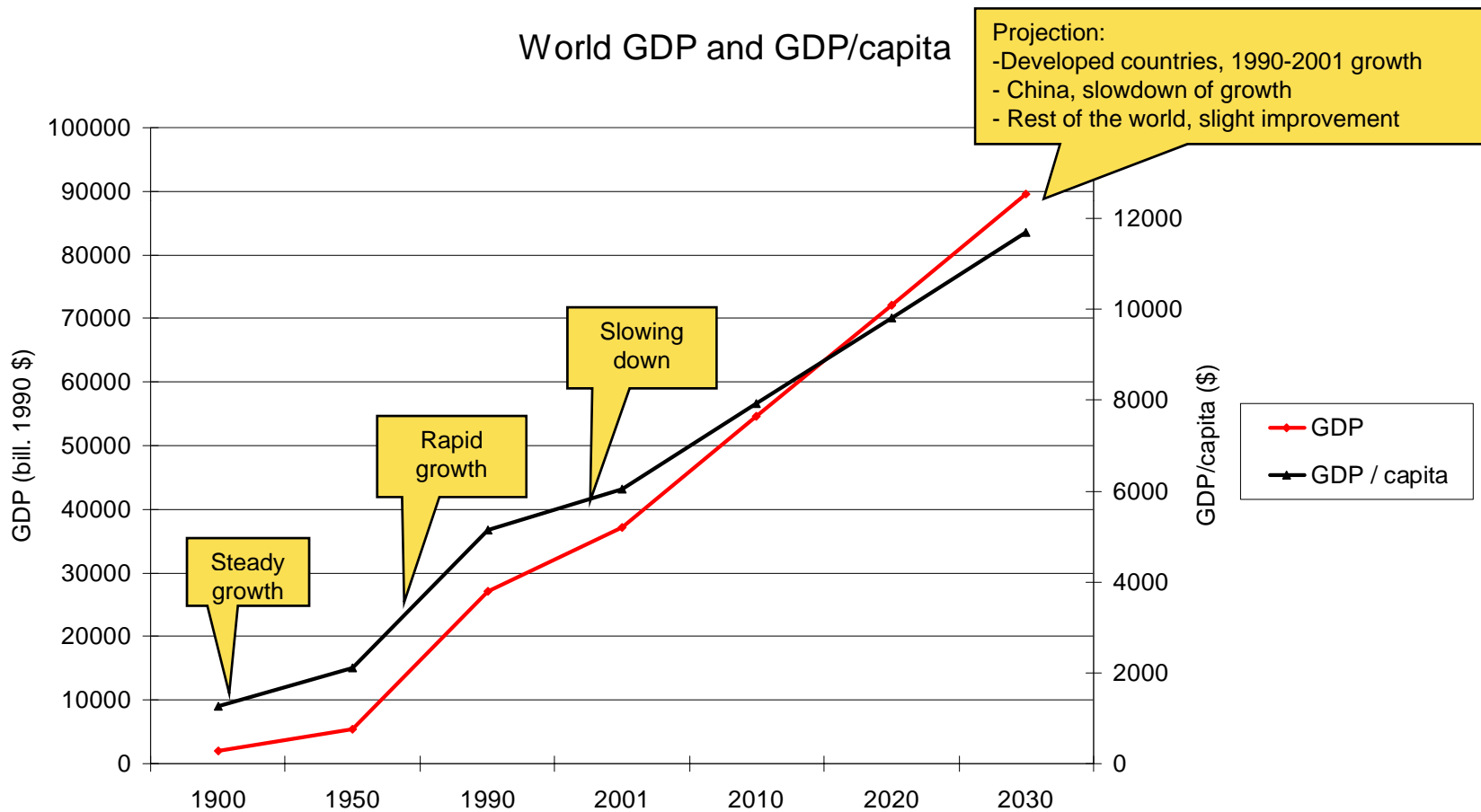
Source: United Nations Population Division



Looking Ahead

- World population grows to 9 billion by 2050 with 7 billion in cities.
- World GDP and GDP/capita more than doubles by 2030.

GDP growth will continue, developed countries growth will slow



Source: Maddison



Looking Ahead

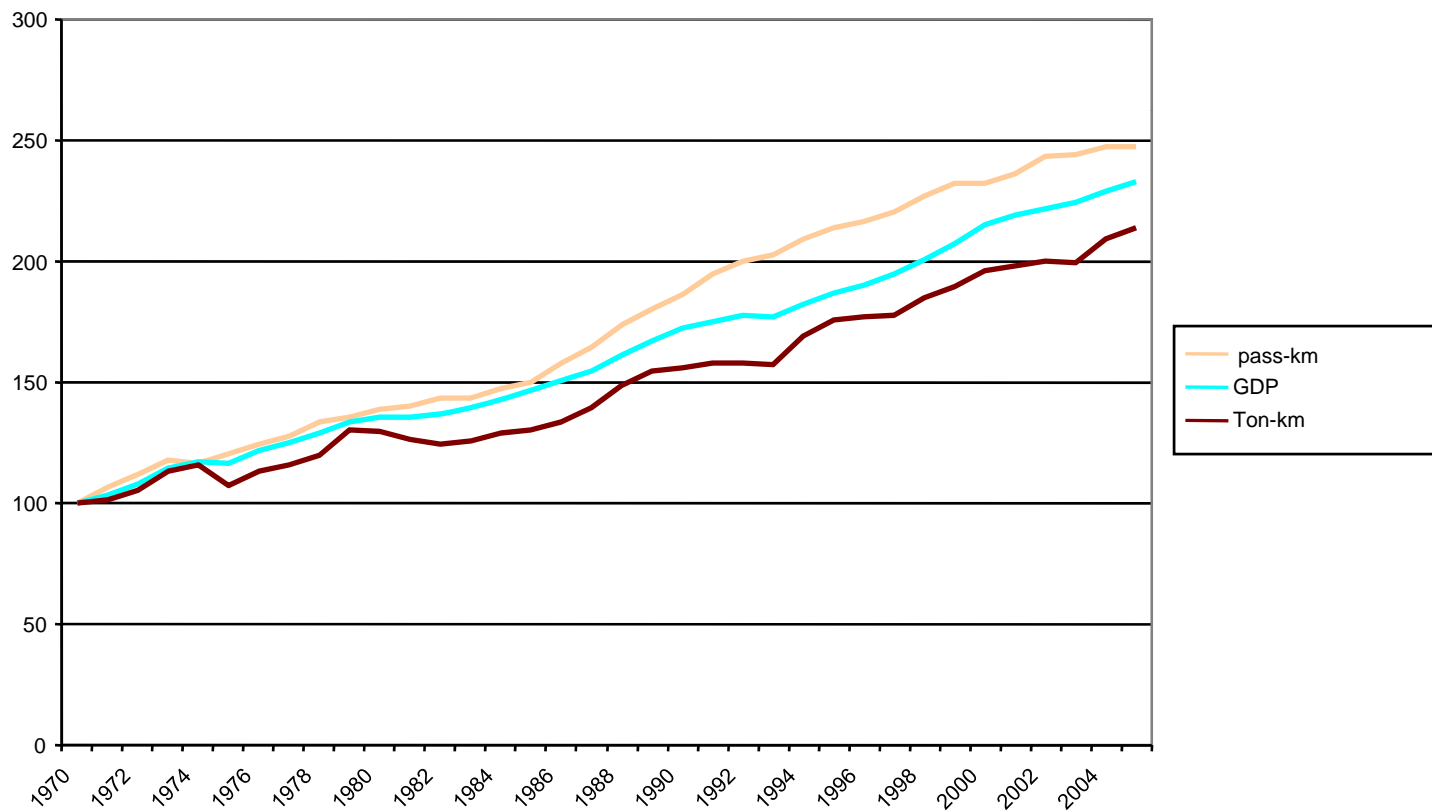
- World population grows to 9 billion by 2030 with 7 billion in cities
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- Trade growth will continue
- Transport growth also

Links between GDP and transport

- Elasticities might alter
- But broad links to continue

Ton-km and pass-km will follow GDP growth, oil consumption has remained at the 1970s level

GDP (constant US\$), freight (ton-km), passenger transport (pass-km) and oil consumption (tonnes) in the EU-15 (index 1970=100)



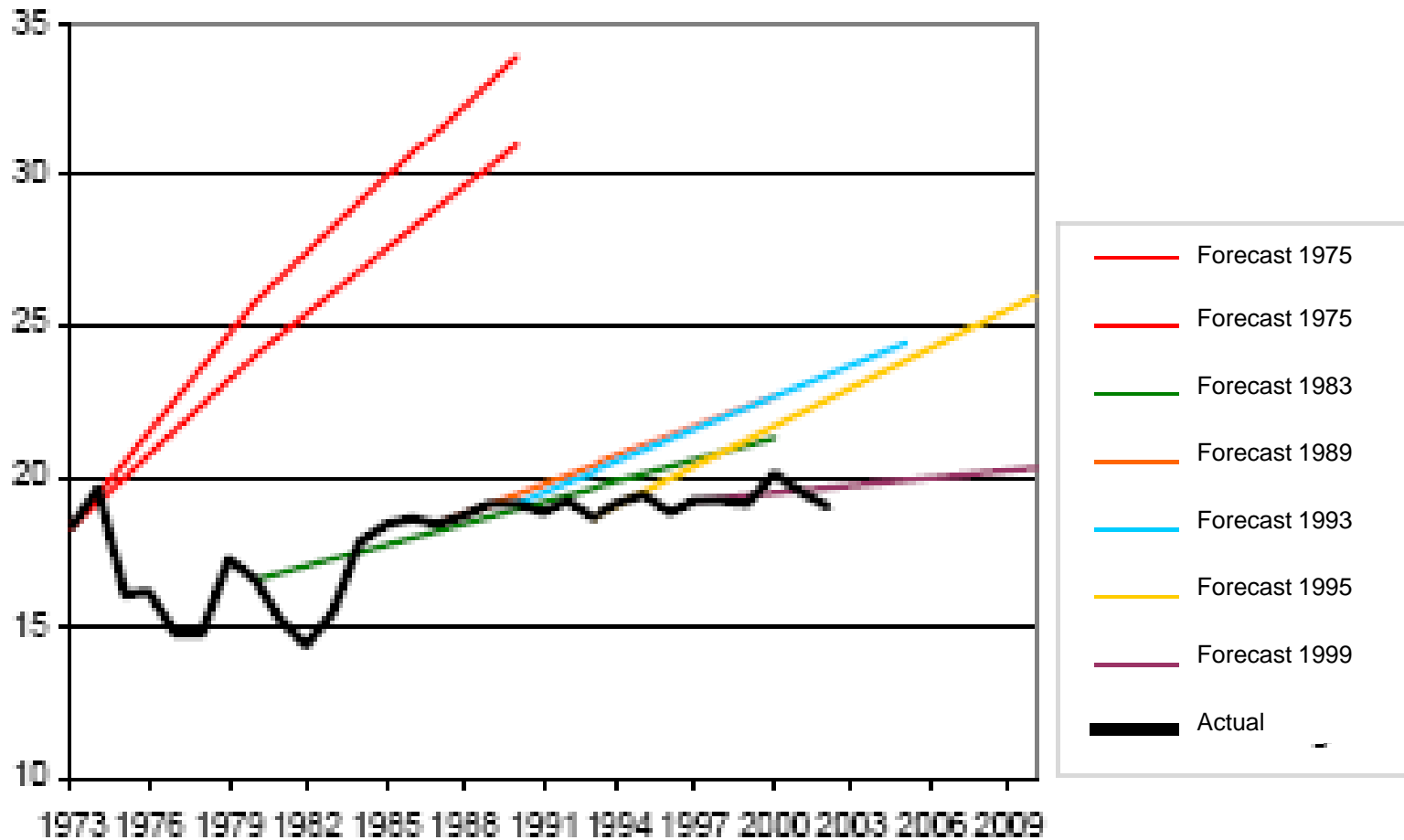
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- Trade growth will continue
- Links between GDP and Transport
 - Elasticities might alter
 - But broad links to continue
- **Transport forecasts:**
 - often wrong, miss structural change.

In 1970s, forecasts overestimated actual trends

Transport on road (bill. ton-km) in Sweden

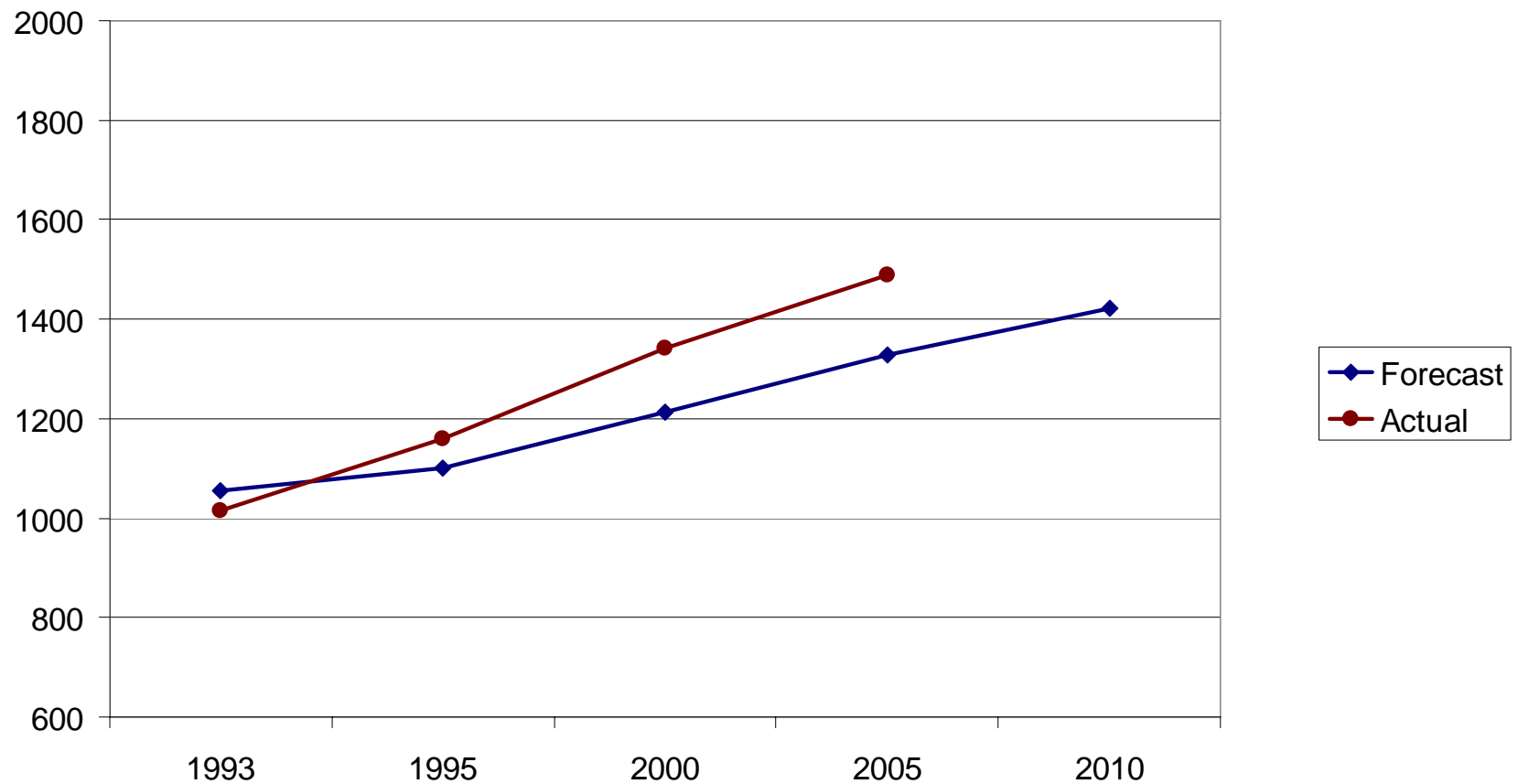
Miljarder tonkm



Source: SIKa 4/2005

Underestimated in 1990s

Europe: Freight – 15 1993-2010, 1000 bill. ton-km



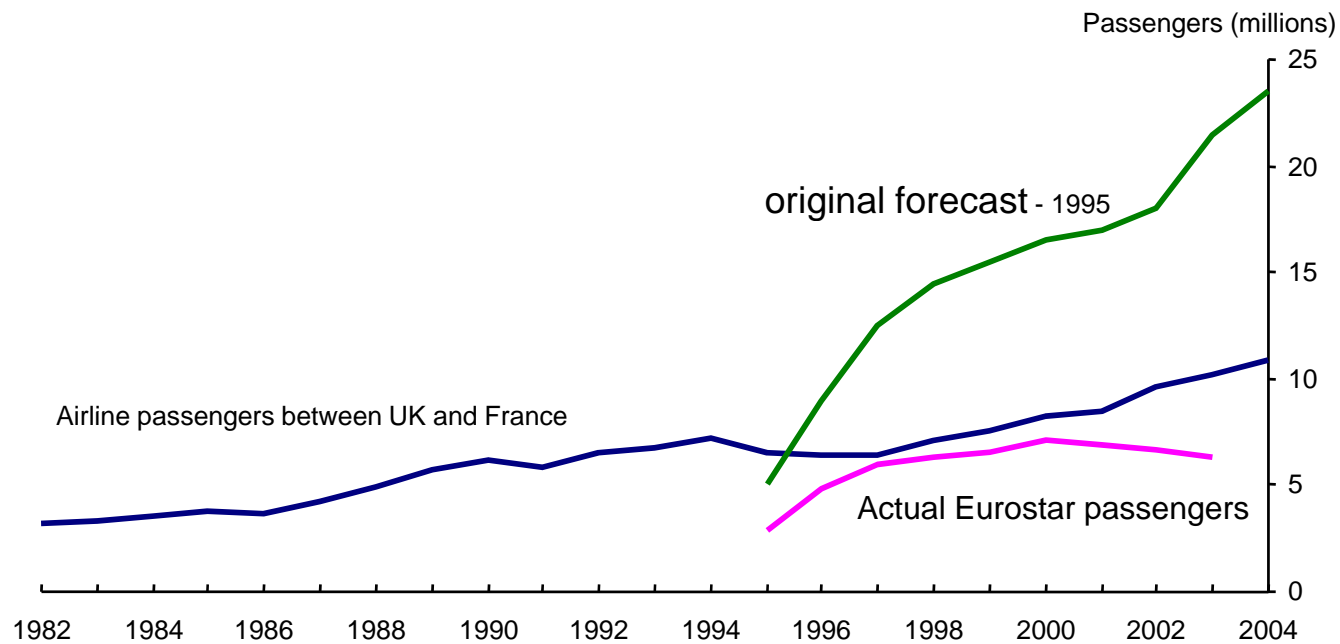


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 - **Suffer from project optimism and biases**

Project optimism

Eurostar passenger numbers and forecasts.





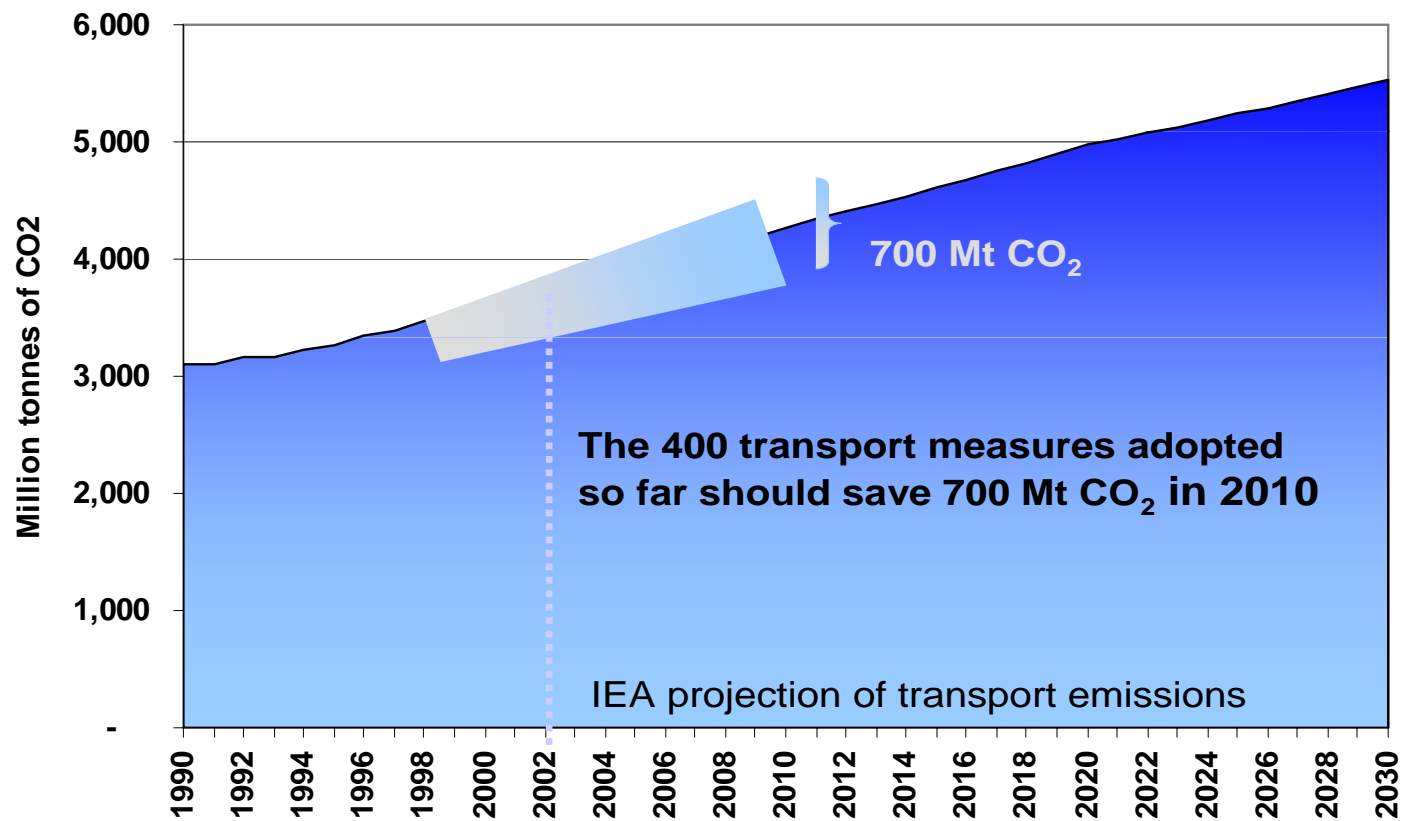
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- **Transport forecasts:**
 - often wrong, miss structural change
 - Suffer from project optimism and biases
 - **But useful to build scenarios, to inform and give warning signs for policy.**

Looking Ahead

- Transport will consume more energy
(i.e. growth will be faster than efficiency improvements)

Energy Use in Transport

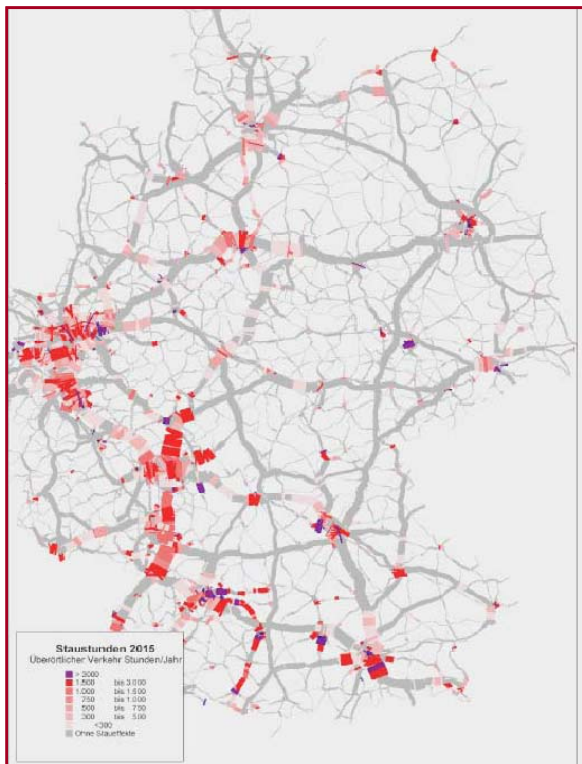




Looking ahead

- Transport will consume more energy
(*i.e. growth will be faster than efficiency improvements*)
- System will face increasing pressure
- Congestion will grow
 - In developing world cities
 - In suburbs in all cities
 - In airports and in the air
 - In ports and inland connections

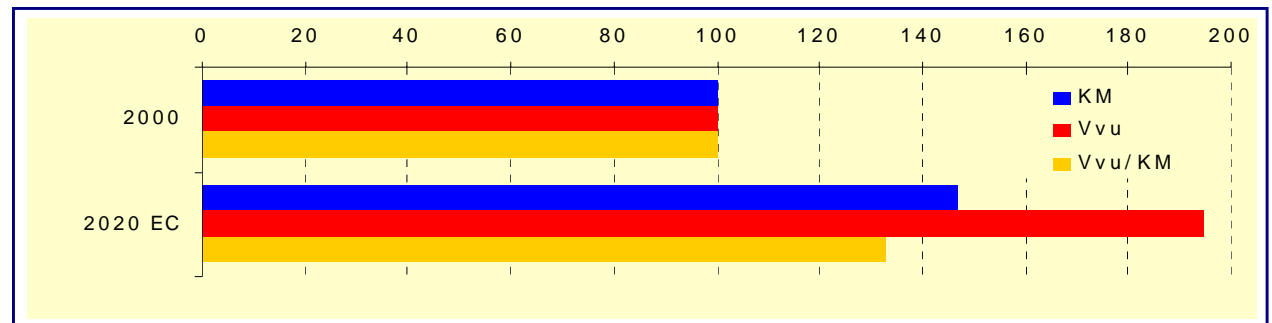
Hours spent in congestion on German roads, 2015 forecast



Hours per road section:

- >3000
- >1500 - 3000
- >1000 - 1500
- > 750 - 1000
- > 500 - 750
- > 300 - 500
- < 300

Congestion outlook in the Netherlands

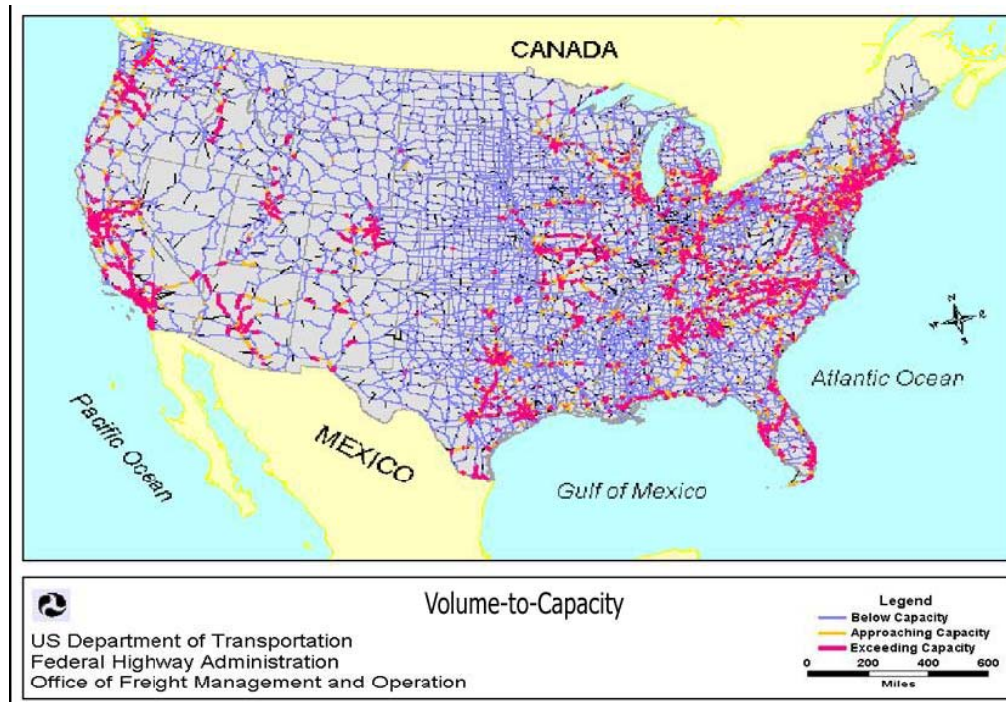


**Congestion increase +30%
by 2020 on Dutch motorways**

Source: IWW.

Source: Dutch Ministry of Transport, Public Works and Water Management

Road Congestion, US 2020

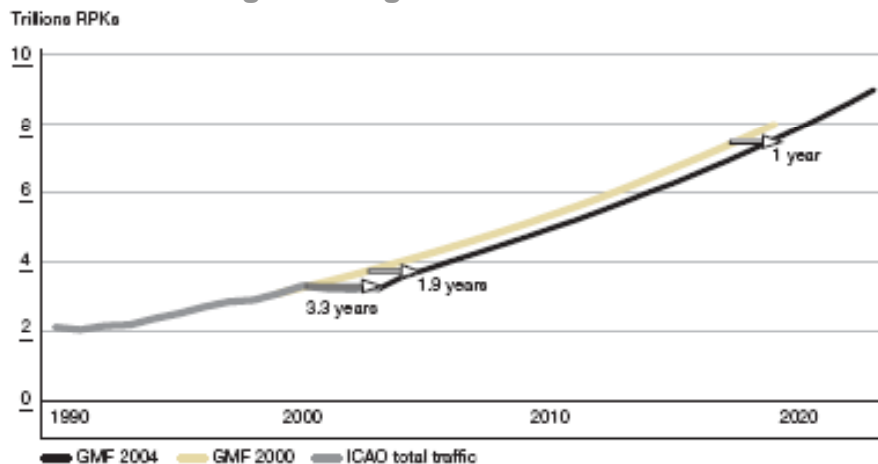


Increased congestion in hub airports

Air Passenger Traffic
expected to double
over the next 20 years

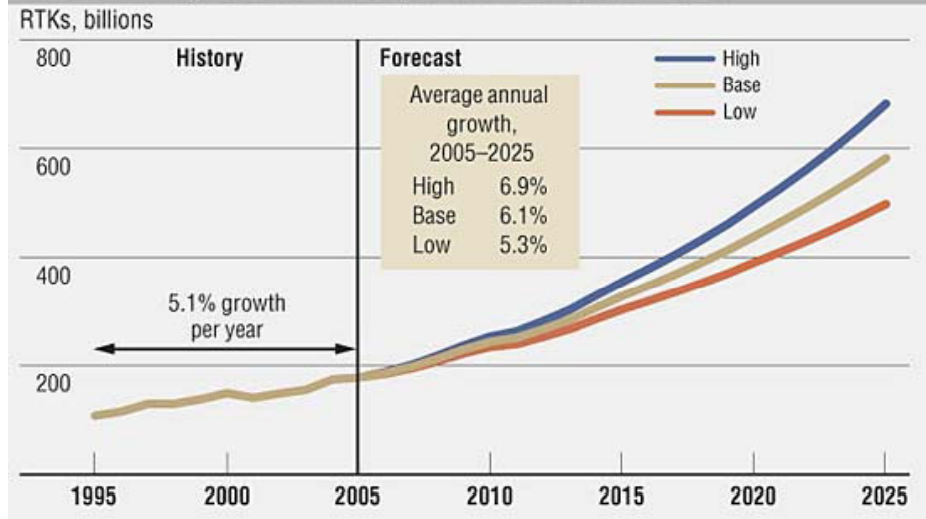
World Air Traffic Outlook

Revenue Earning Passenger Kilometres



Sources: Airbus for passengers, Boeing for freight

World Air Cargo Traffic Will Triple Over the Next 20 Years



Sources: Airbus for passengers, Boeing for freight

Air Freight Traffic
expected to triple
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Lessons

- Policies
- Politics



Policies

- **Most countries have similar policy aims**
 - But few have clear priorities...
 - ...or discussion of possible tradeoffs
 - Most underestimate societal and economic forces and trends...
 - ...especially those favoring car and truck use
 - Few worry about demand management or climate change
 - Most make limited use of economic instruments.



Policies

- **Policies may reverse or halt existing trends**
 - But measures are needed outside transport sector (fiscal, land use...)
 - ...need to be sustained over a long period
 - ...are expensive
 - and there are few successes so far.

Advice to policy makers and politicians

- **Improve appraisal of projects**
 - 90% of investment projects go over budget
 - procedures are more and more lengthy, complex and contested
 - Need strategic appraisal and political debate
 - Far better communication to public
 - Agreement on timetable for procedures



Advice to policy makers and politicians

- **Tackle problems directly**

Not indirectly as we have done, for example, by dealing with:

- Air quality through modal split policies
- Truck traffic growth through rail investment
- Congestion through public transport support
- Oil use through biofuels
- Or by giving subsidies to everyone

With measures not aspirations.

Advice to policy makers and politicians

- **Don't raise expectations or set unrealistic objectives as we did with promises to**
 - eliminate congestion (UK)
 - get traffic off roads and onto rail (France)
 - eliminate accidents (Netherlands & others)
 - have sustainable system (New Zealand)



Advice to policy makers and politicians

- **Beware of secondary objectives for transport such as:**
 - investing for employment reasons
 - protecting national operators/ companies
 - giving priority to suppliers rather than consumers



Conclusions

- Transport's importance will continue to grow.
- Public expectations will continue to increase.
- Constraints on space, finance, environment will intensify.
- Policies and politics will need to adapt so as to manage demand, and not simply meet it.