

# PRIMES and SCENES comparison

Ian Williams, WSP, UK  
 Angelo Martino, TRT Trasporti e Territorio,  
 Italy

TREMOVE Contact Group Meeting  
 Leuven

27-28 May 2004

# Summary

- Outline the main common assumptions that are input to SCENES
- Compare SCENES transport demand growth versus PRIMES growth to 2020
  - Passengers
  - Freight
- TRENDS road activity

## Contrasting modelling aims and approaches

- Models were designed so as to analyse different issues
- PRIMES has
  - A detailed representation of time
  - But a country level representation of transport
  - Covers wider energy issues – not just transport
- SCENES has
  - A detailed spatial and network representation
  - Takes account of demand impacts of infrastructure (TENS)
  - But is only run for 1995, 2010, 2020
  - Focused primarily on transport demand and supply representation
- Models are complementary rather than in competition

## EU15 Growth Rates

Country	GDP forecasts	
	PRIMES	PRIMES
Austria	0.08%	2.2%
Belgium	0.17%	2.1%
Denmark	0.25%	2.1%
Finland	0.16%	2.7%
France	0.33%	2.4%
Germany	0.07%	2.0%
Greece	0.27%	3.6%
Ireland	0.86%	4.7%
Italy	-0.05%	2.2%
Luxembourg	0.87%	4.2%
Netherlands	0.47%	2.6%
Portugal	0.25%	3.4%
Spain	0.16%	3.1%
Sweden	0.15%	2.4%
UK	0.26%	2.6%
<b>EU15 Total</b>	<b>0.18%</b>	<b>2.4%</b>

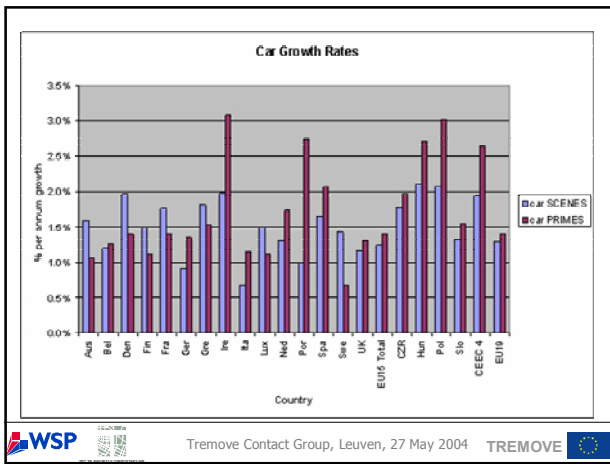
- SCENES uses the PRIMES rates as direct inputs
- Population grows very slowly
- GDP growth is an important source of traffic increase

## Accession Countries - growth rates input from PRIMES

Forecasts	Population	GDP
Annual growth % 1995-2020		
Czech R.	-0.18%	2.8%
Estonia	-1.06%	3.7%
Hungary	-0.48%	3.5%
Latvia	-0.64%	4.4%
Lithuania	-0.38%	4.1%
Poland	-0.10%	4.3%
Slovak R.	0.00%	3.8%
Slovenia	-0.21%	3.2%
<b>8 total</b>	<b>-0.20%</b>	<b>3.8%</b>

## Comparison to PRIMES – Points to note

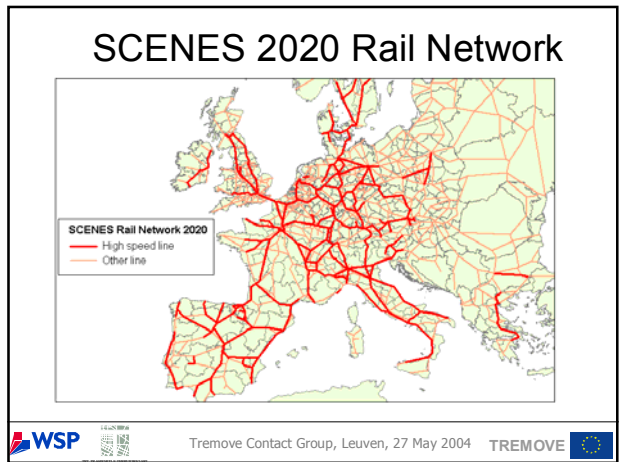
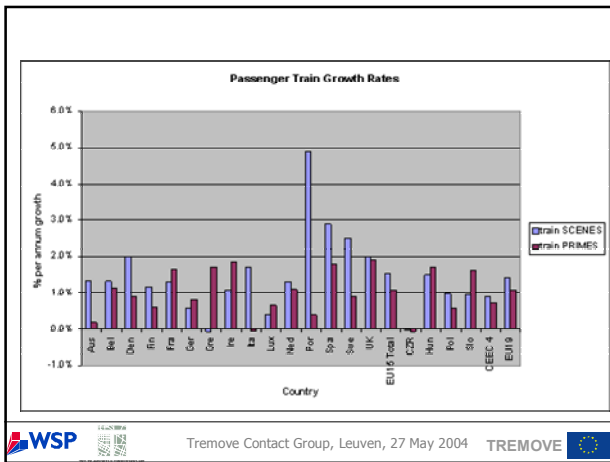
- SCENES
  - Shows movements on national territory - pass. and freight
  - Includes domestic legs of import, export
    - plus through trips / transit movements on the territory
  - Excludes the domestic part of Acc(8) freight
    - only includes their freight movements to/from the EU
- Comparison is annual % growth in pass. & tonne kms
  - Averaged over 1995 to 2020
- Comparison is versus the PRIMES scenario
  - “without climate policy” measures
- Definitions of air and inland waterway results are difficult to make compatible between the models
  - So not presented here



## Growth in car passenger kilometres

- EU overall annual growth rates are close for PRIMES (1.4%) and SCENES (1.2%)
- Exogenous assumptions on growth in national car ownership impact strongly on SCENES growth rates
- We assumed that the very high car purchase taxes in Denmark and Finland will not persist to 2020

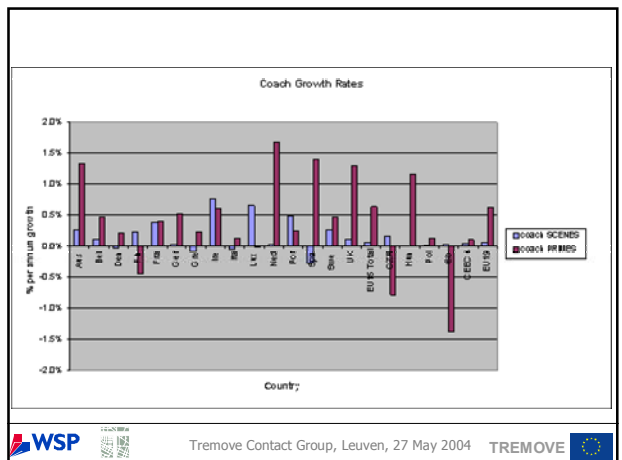
WSP TREMOVE Contact Group, Leuven, 27 May 2004 TREMOVE



## Rail passenger kilometres

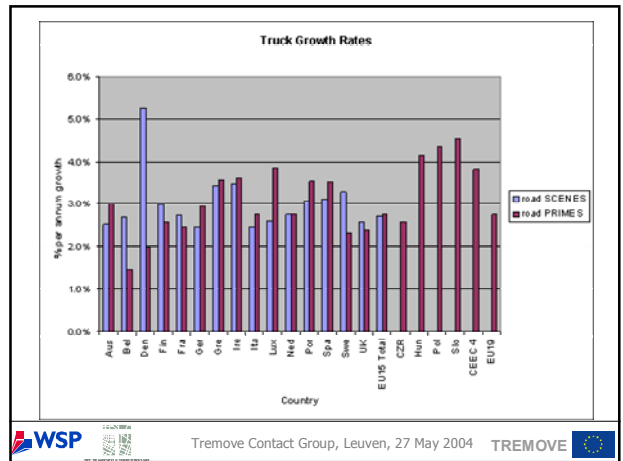
- EU overall annual growth rates is lower in PRIMES (1.1%) than in SCENES (1.5%)
- TEN high speed rail investment increases demand strongly
- Denmark has 3 major increases in connectivity 1995-2020
- Spain and Portugal have major improvements in rail connectivity for main population centres
- Assumes that tariff levels are constant in real terms
  - SCENES growth rates would decline if rail tariffs increase (i.e. rail subsidies to users reduce)

WSP TREMOVE Contact Group, Leuven, 27 May 2004 TREMOVE



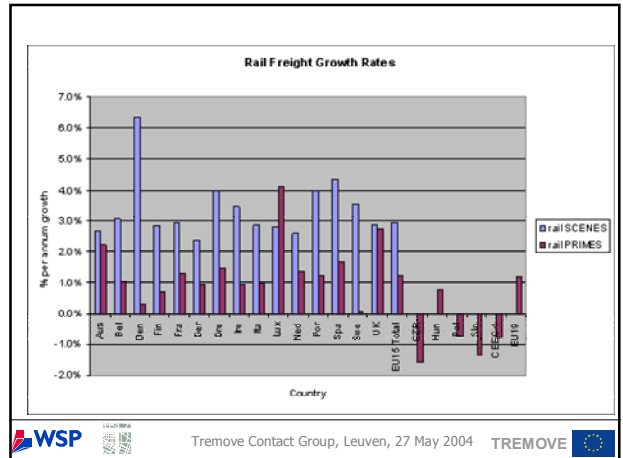
## Bus/coach passenger kilometres

- SCENES forecasts little overall growth 0.1%, PRIMES estimates 0.6%



## Road freight tonne kilometres

- EU overall annual growth rates are similar in PRIMES (2.8%) and in SCENES (2.7%)
- In Denmark, new connections attract goods from ferry/shipping to road
- They have some effect also on international traffic to/from Sweden
- Otherwise most SCENES results are close to PRIMES



## Rail freight tonne kilometres

- Overall rail freight growth rates in SCENES (2.9%) are higher than PRIMES (1.2%)
- SCENES rail growth rates depend on
  - Rail tariffs not growing faster than road
  - Rail quality of service competing with road
- In Denmark, new connections attract goods from ferry/shipping to rail and not just to road

## Comparisons with TRENDS - base

- Methodology for road activity is different
  - SCENES estimates tonne & pass. kms then converts to vehicle kms
  - TRENDS is in reverse - starting from vehicle fleets
- TRENDS has twice the base volume of truck kilometres as SCENES
  - SCENES has more vehicle kms for the largest truck size >32 tonne

## Comparisons with TRENDS - forecasts

- Forecasting methodologies differ
- Growth rates to 2020
  - Broadly similar for car, light duty truck, heavy duty truck
  - Bus and motorcycle increase moderately in SCENES, but not in TRENDS

## Conclusions

- The match between PRIMES and SCENES is reasonable
  - Differences are generally for reasons that are understood
- SCENES would benefit from wider use of official national growth projections for its input assumptions:
  - Car ownership growth
  - Public transport fare levels and fuel duties – not the current constant cost scenario