

Wider Economic Impacts of Transport Infrastructure Investments – Relevant or Negligible?

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Infrastructure Investments – Relevant or Negligible?

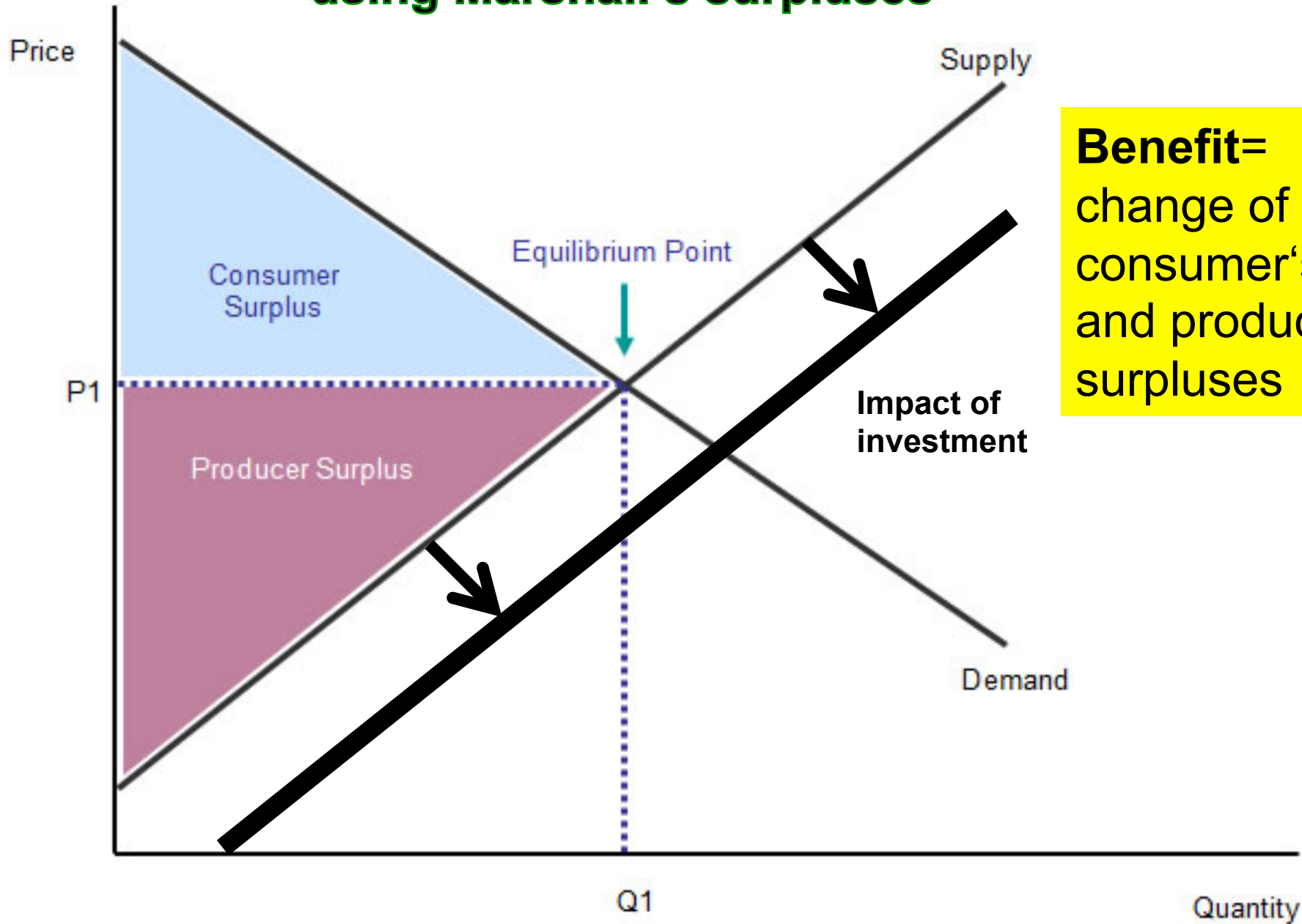
- Treatment of WEI in the BVWP assessment
- Dupuit's utilité relative as the basis of WEI measurement
- Modern approaches to measure WEI
- Conclusions and recommendations

- **Moving back to orthodox neo-classics**
- **Full employment in all regions → WEI negligible**
- **No consideration of endogenous growth theory or new geographic economy**
- **Failures with empirical estimations**

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Measurement of direct benefits using Marshall's surpluses

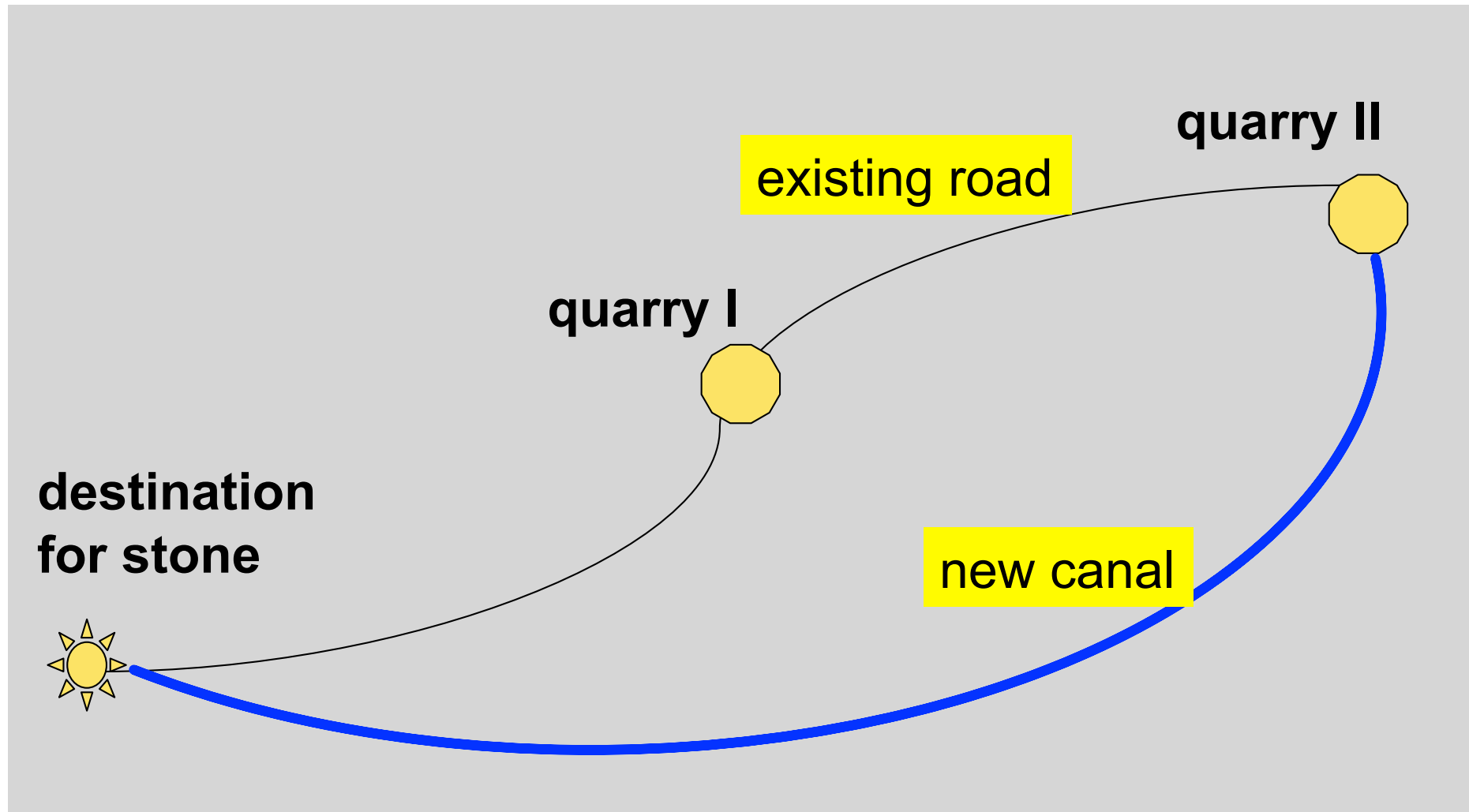


Benefit=
change of
consumer's
and producer's
surpluses

**Dupuit measure of benefit: cost/price
change of the product (stone), not of
transport – basics of WEI**

ECON

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„Breaking the bread only for those who can buy it leaves to social economy the trouble of supplying it to those who cannot afford to give anything for exchange.“

J. Dupuit, 1848.

- „Mr. Dupuit and the marginalists“
- „engineers *do* economics while others talk about it“ (A. Caquot)
- understanding of monopolistic competition and contestability
- understanding of the importance of product differentiation and price discrimination
- re-rediscovery of secret origins of modern transport economics by Boiteux, Lancaster, Baumol/Panzar/Willig, Laffont/Tirole

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Benefit and Impact types	Welfare Economic Benefits (WEB)	Overlapping of WEB and GI	GDP Impacts (GI)
Conventional economic appraisal			
VOC savings	✓		
VTTTS: Leisure	✓		
VTTTS: Commuting	✓		
VTTTS: Business	✓	WB3, GI6	
Accident cost savings (safety)	✓		
Environmental impacts reduction	✓		
Wider Economic Benefits			
WB1: Agglomeration economies	✓	GI4	
WB2: Increased competition	✓	GI5	
WB3: Increased output in imperfectly competitive markets	✓	GI6	
WB4: Welfare benefits arising from improved labour supply	✓	GI1, GI2 & GI3	
Wider Economic Benefits and GDP Impacts			
GI1: More people choose to work		WB4	✓
GI2: Some people choose to work longer hours		WB4	✓
GI3: Move to higher productive jobs		WB4	✓
GI4: Agglomeration economies		WB1	✓
GI5: Imperfect competition		WB2, WB3	✓
GI6: Business time savings and reliability		VTTTS Business	✓

$$(3.1) \quad WB1 = \sum_{i,j} \left[\left(\varepsilon_{i,j} \times \frac{\Delta ED_j}{ED_j} \right) \times GDP_{i,j} \times E_{i,j} \right]$$

where

i: industries j: locations ED: effective employment density

ε : elasticity of productivity with respect to effective employment density

GDP: output per employed person

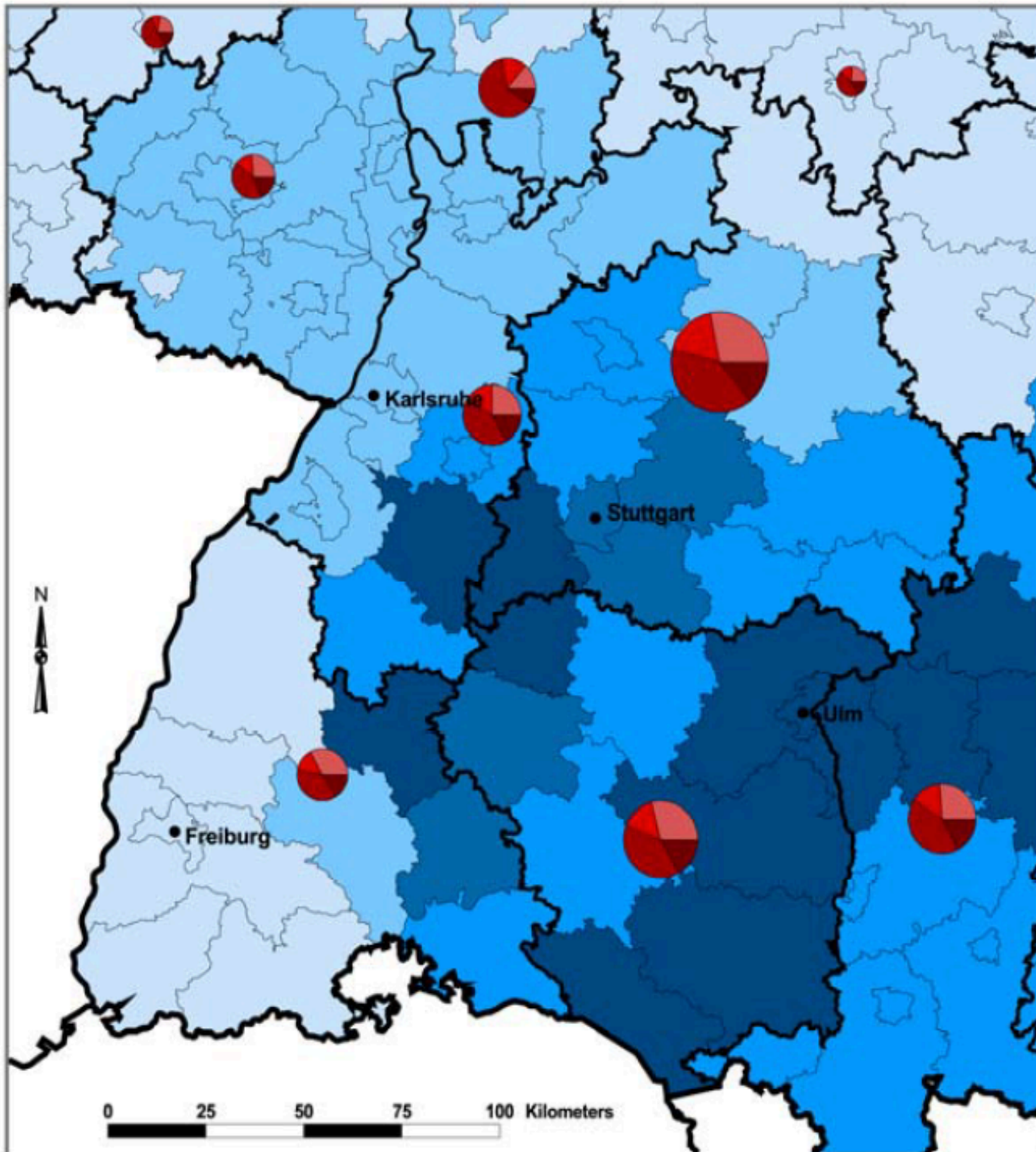
E: number of jobs

- **Macro-economic models**
 - Endogenous growth models
 - Econometric models

- **Regional economic models**
 - LUTI models
 - SCGE, new economic geography
 - Econometric models
 - Potential factor models

- **SDM, system dynamic models**

- **IAM, integrated assessment models**



WEI of HSR Stuttgart-Ulm

regional impacts:

dark blue: high
Light blue: low
(in % of GDP)

sector impacts:

areas of red circles
light.: industry
light-med: trade,
transport, tourism
med-dark: commercial
services
dark: public
services

TEN-T and the status of CNC Infrastructure planning

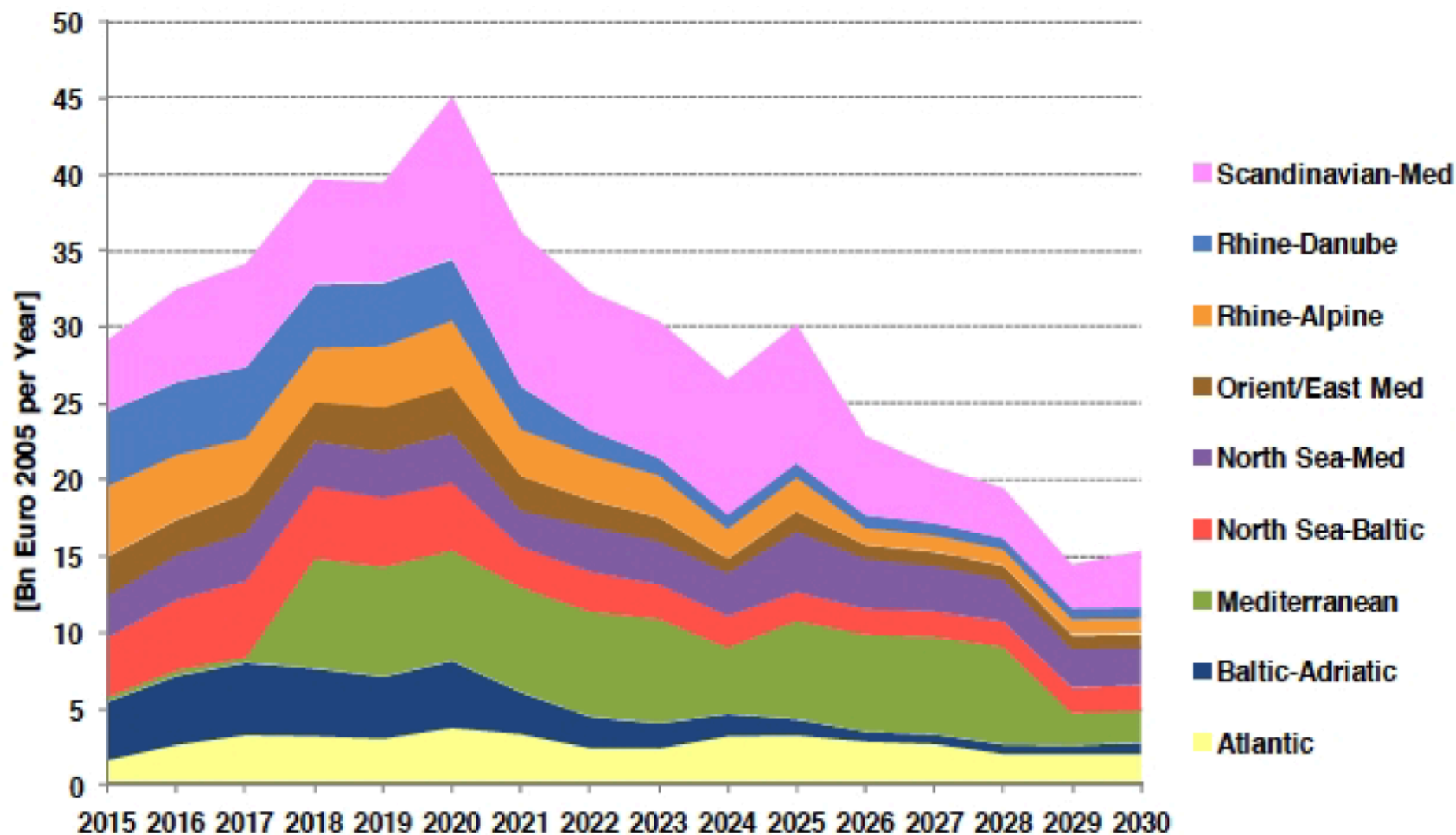
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TEN-T
CN

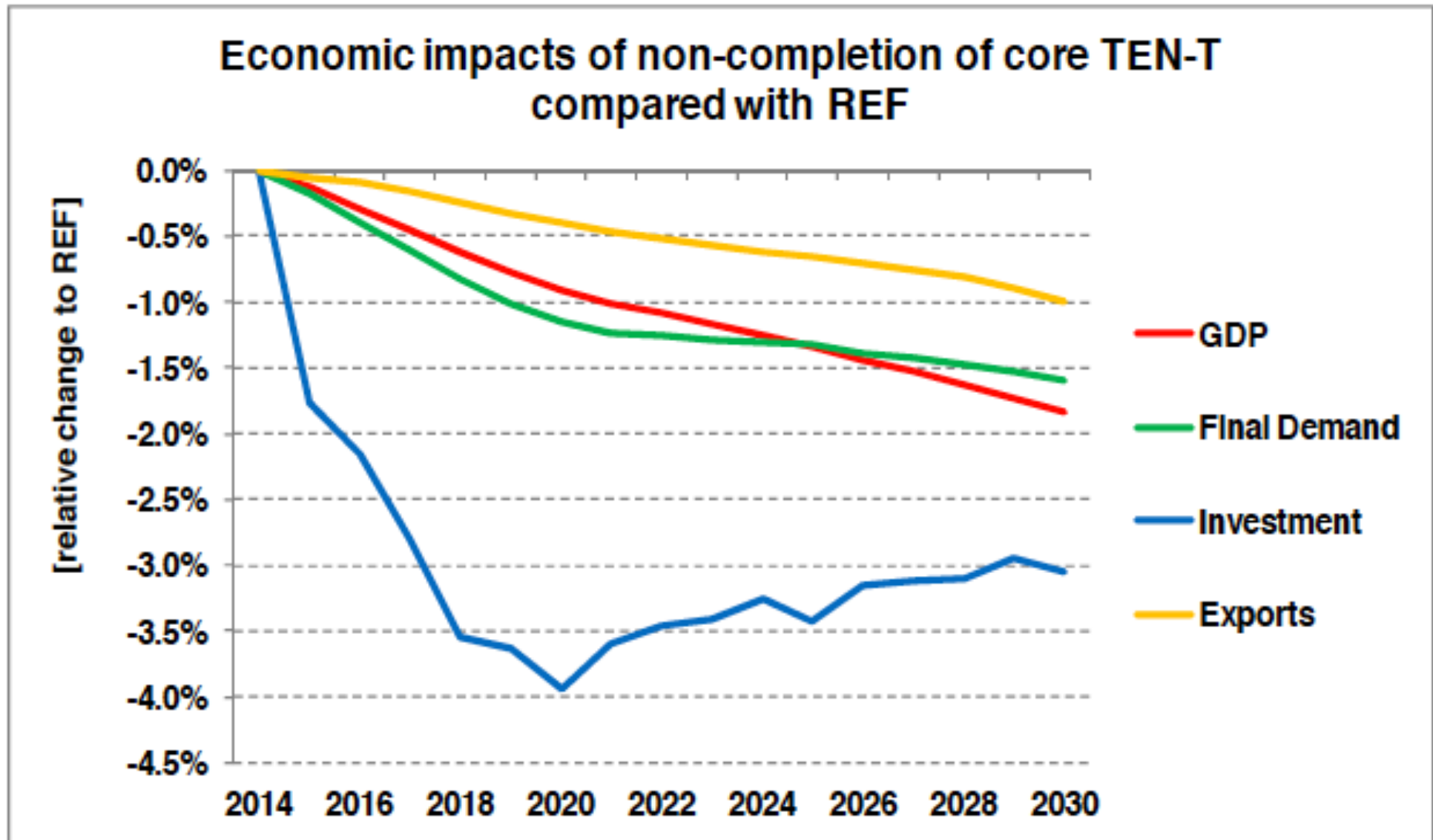


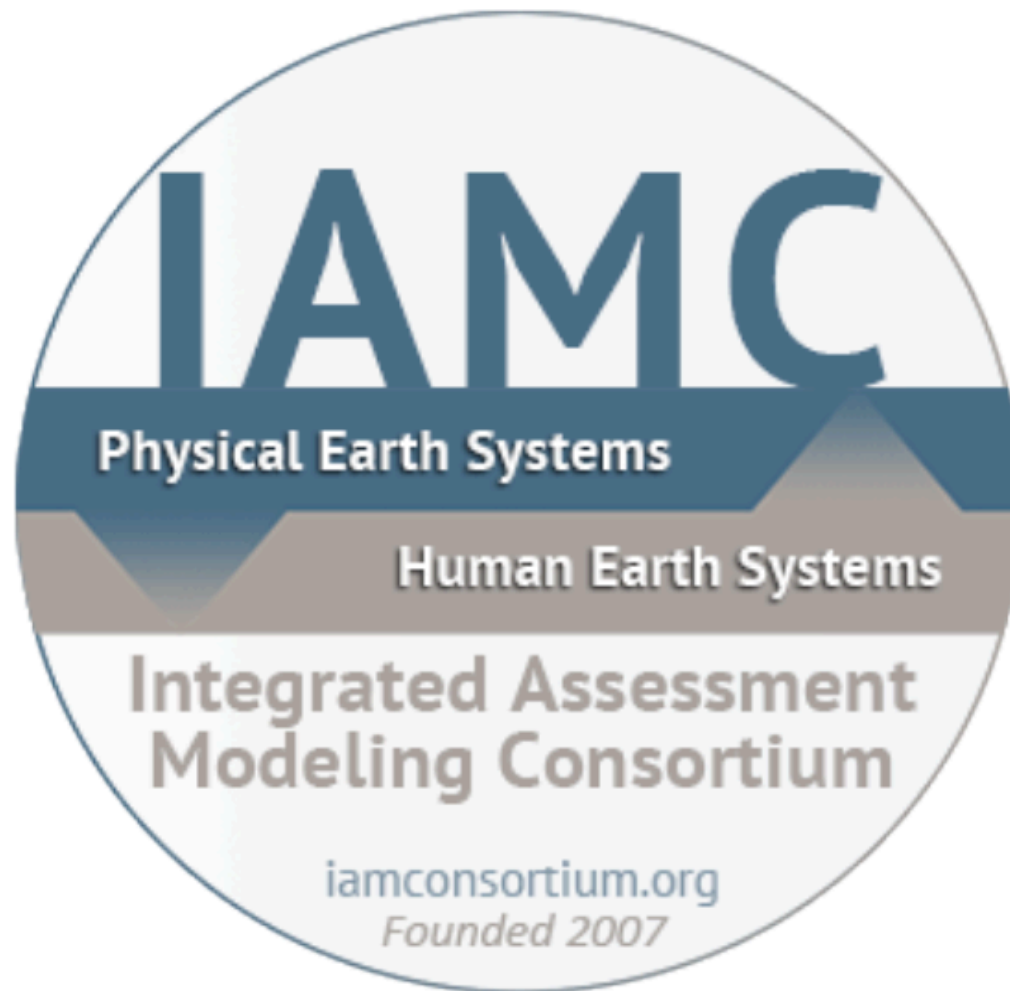
Corri-
dors

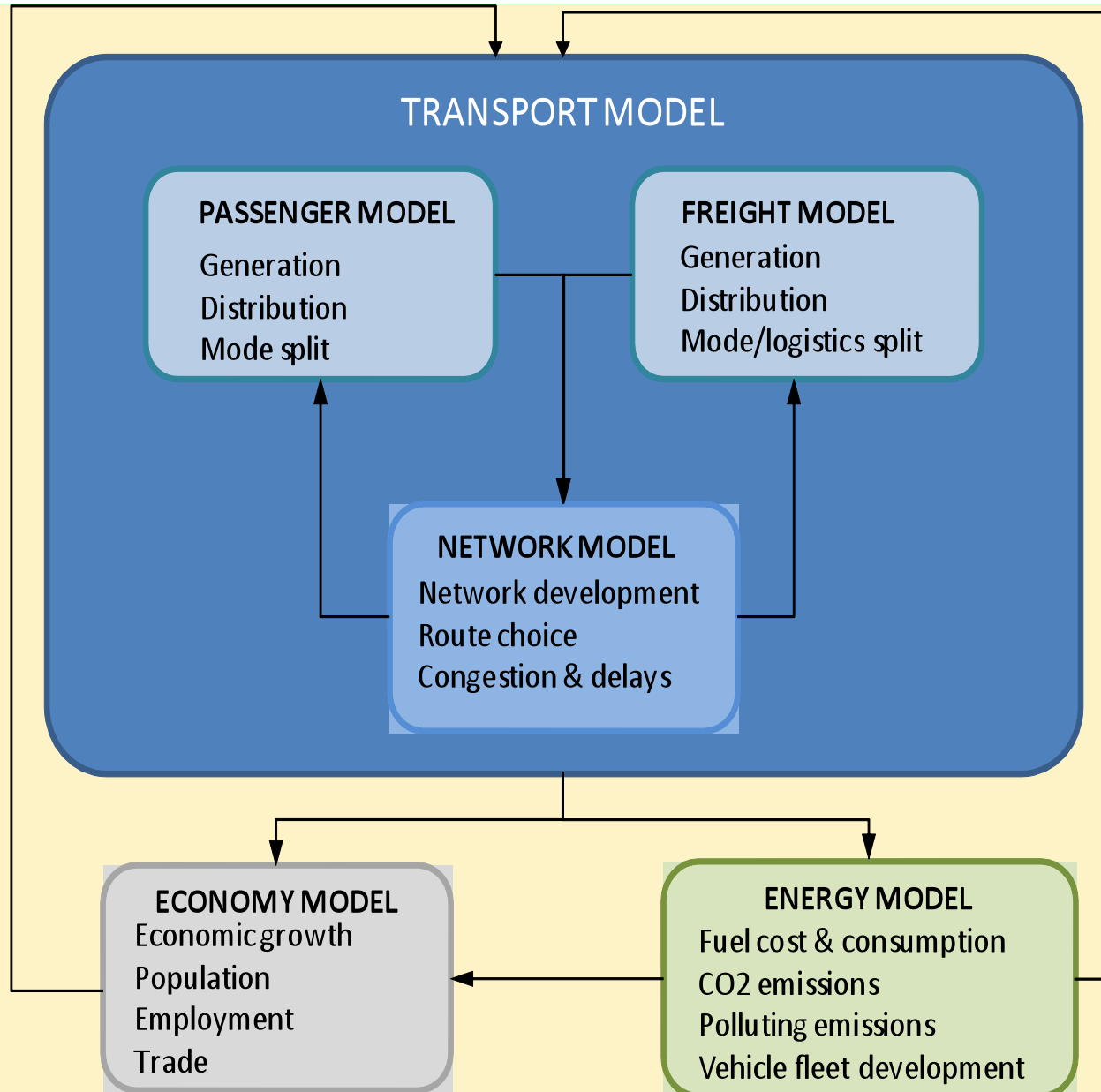
Annual TEN-T Investments per Corridor



Programme	Objective	Funding Objective	Planned budget EUR million	Decided budget EUR million	No of co-funded projects
MAP	FOB1	Cross-border, bottlenecks, missing links	6,000	7,147	99
	FOB2	Decarbonised and innovative transport	250	146	28
	FOB3	Integrated, interconnected, interoperable transp.	750	799	67
	FOB4	Cohesion countries – ring-fenced budget	4,000	4,739	48
AWP	FOB1-3	Cross-border, bottlenecks, innovation, interoperability, etc.	930	186	34
		Total call	11,930	13,017	276







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Infrastructure Investments – Relevant or Negligible?

- **WEI relevant for large projects and infrastructure investment programmes**
- **Innovation, education and network infrastructures relevant for the trajectory of future growth**
- **No unique approach for measuring WEI existing**
- **Launching independent WEI study and establishing scientific committee of international experts**

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