The Economics of Regulating Air Traffic Control

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Florence May 2017

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Competition for Air Traffic Management

Economics of Regulation of Air Traffic Control - Outline

- Economics of regulation
- 3 “theoretical” applications:
  - Can regulation work when ATC is governed by union-government bargaining? (ACCHANGE)
  - The potential of unbundling tower control (COMPAIR)
  - Competition for en route ATC in Europe (COMPAIR)
- Conclusions

Regulation Theory

		Private monopoly	Public/private +Free entry + auction	Public monopoly
Objectives regulator	Consumer Surplus (price+ delay)			YES
	Profits	YES	YES	(YES)
	National suppliers			YES
	Wages+employment			YES
Information of regulator	Full info			
	incomplete	Important	Not important	important
Regulation schemes can they work	Price cap	YES Good cost control – risk of sticking to price cap	Not needed	NO poor incentives for cost cutting - sticking to price cap
	Yardstick competition	YES Good but depends on information	Not needed	NO
	Unbundling	YES	Not needed	YES
	No regulation	NO	YES	NO
Our ATC studies		Tenders for en-route control	Unbundling Tower control	Union bargaining model to show that regulation does not work

Public monopoly behaviour in a union bargaining model 1

Assumption: regulation is outcome of bargaining between Government and Unions

Unions:

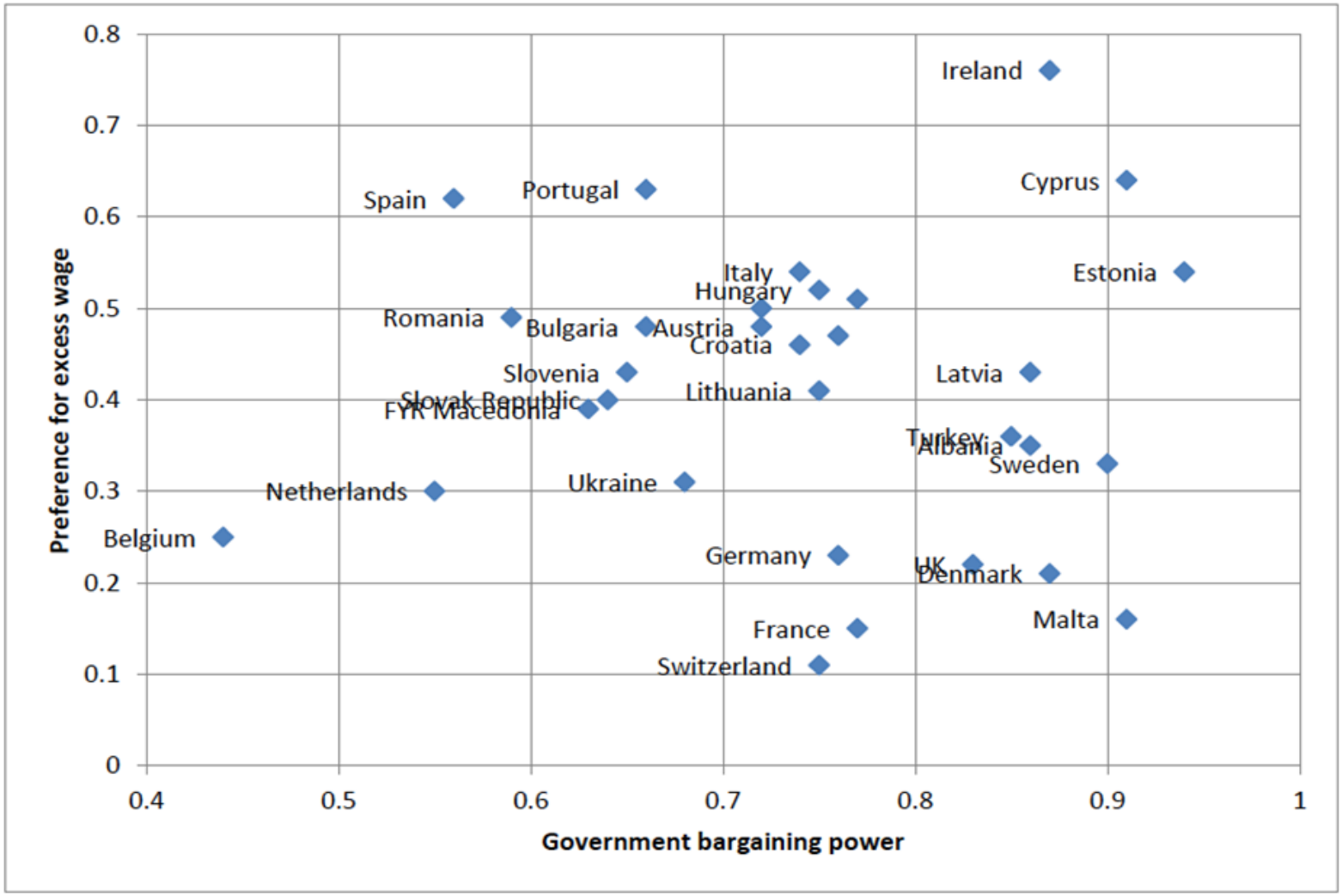
maximize mix of Higher Wages+ Extra Employment

bargaining power through threat of strikes

National Governments:

maximize national consumer surplus + national suppliers and ready to exploit foreign users

Union bargaining power and preferences (ACCHANGE project)



Public monopoly behaviour in a union bargaining model

OUTCOME (depends on bargaining power Unions + preferences of unions)

Many EU policies will fail:

- Standardization of equipment: no as union power will decrease
- FAB's: will not work as it may threaten national union power
- Price-cap: May not work as government may step in with subsidies
- Technology adoption: only if it preserves monopoly and allows cost reduction that is not passed on to consumers

SOLUTIONS

- Privatisation
- Forced unbundling
- Competition for the market – virtual centers

Unbundling: market for tower control via auctions

- 2 BENEFITS OF TOWER CONTROL AUCTIONS:
  - Cost reduction
    - Anecdotal evidence from Spain & Sweden that costs can be reduced strongly by using better organization, better technologies, lower pay for ATCO's…
  - Transparency :
    - many regional airports are heavily subsidized - one of the mechanisms is cross-subsidisation of tower control by other ANSP services
    - The best way to have transparent accounts is a bidding process.

Experience up to now

- Implementation Experience in UK, Spain , Germany, Sweden and Norway
- Refused implementation is also interesting but more difficult to study

UK	All airports open except Heathrow Incumbent = private company 3 out of 11 airports left incumbent Most airports renegotiated contract
Spain	Smaller airports open 12 towers operated by newcomers Still large inefficiencies in bigger airports
Germany	Regional airport towers opened to competition At least 14 towers left the incumbent
Sweden	Smaller airports liberalized At least 17 towers left the incumbent
Norway	Tender for second Oslo airport

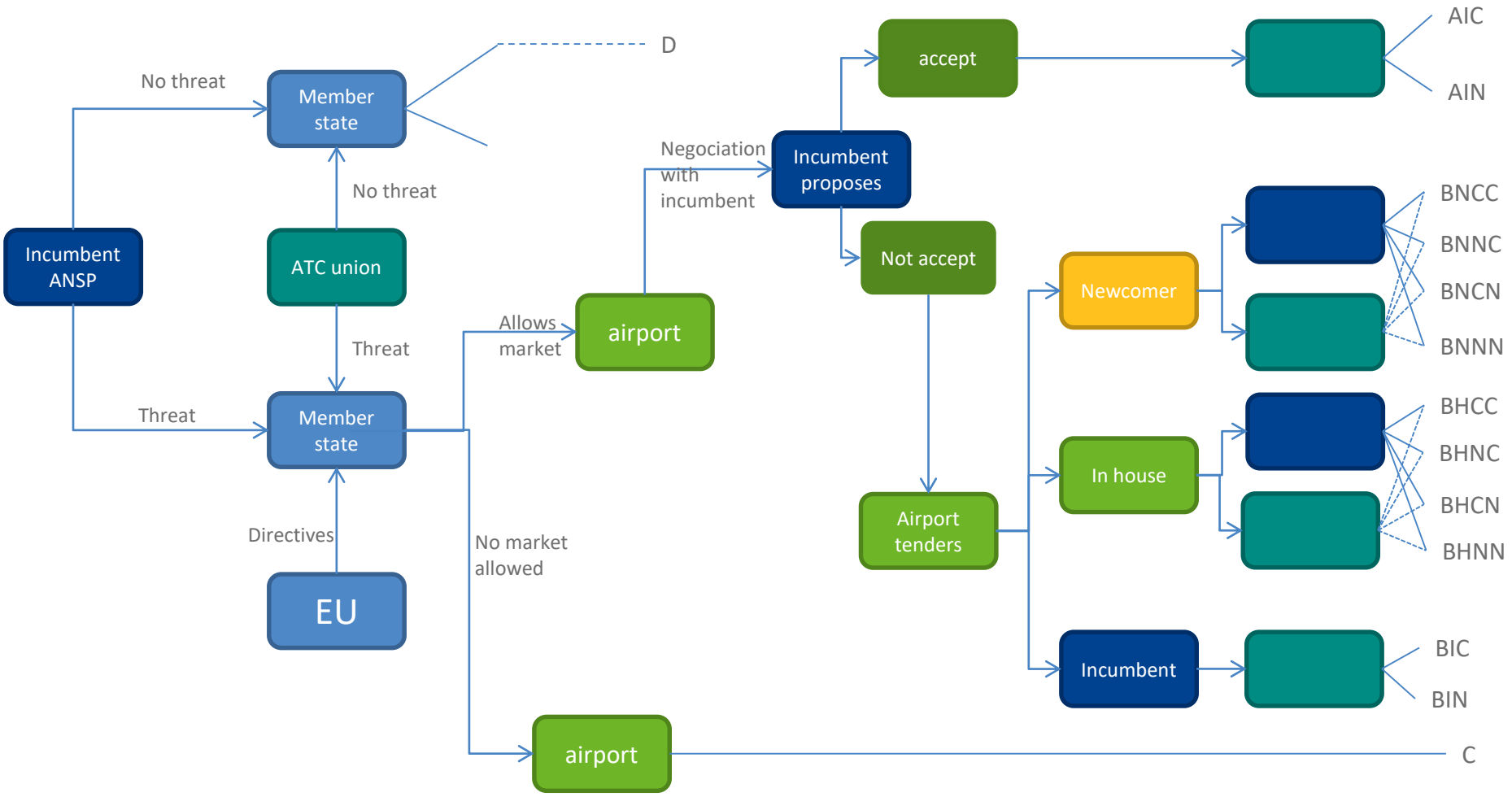
What are conditions for a market to develop?

- Who pays for tower control and does cost control really matter for the airport?
  - Airports can be private, public or mixed
  - Evidence (Adler & Liebert, 2014) that private airports will always strive for lower costs and that also other airports strive for lower costs when airport encounters strong competition from other airports
- Is the bid taker likely to observe the procedure and select the lowest bid?
  - Legal battles by incumbent (in many sectors as it is important)
- Do all parties have the same information?
  - Winners' curse probably not so important
- Are there important economics of scale involved?
  - For one tower: yes there are economics of scale
  - Combining several towers?
  - Vertical: what is role of coordination between tower and en-route control and between tower and internal airport operation?
- Important role for national regulator: why is it successful in the UK and not in most other countries? "***belief in competition***"

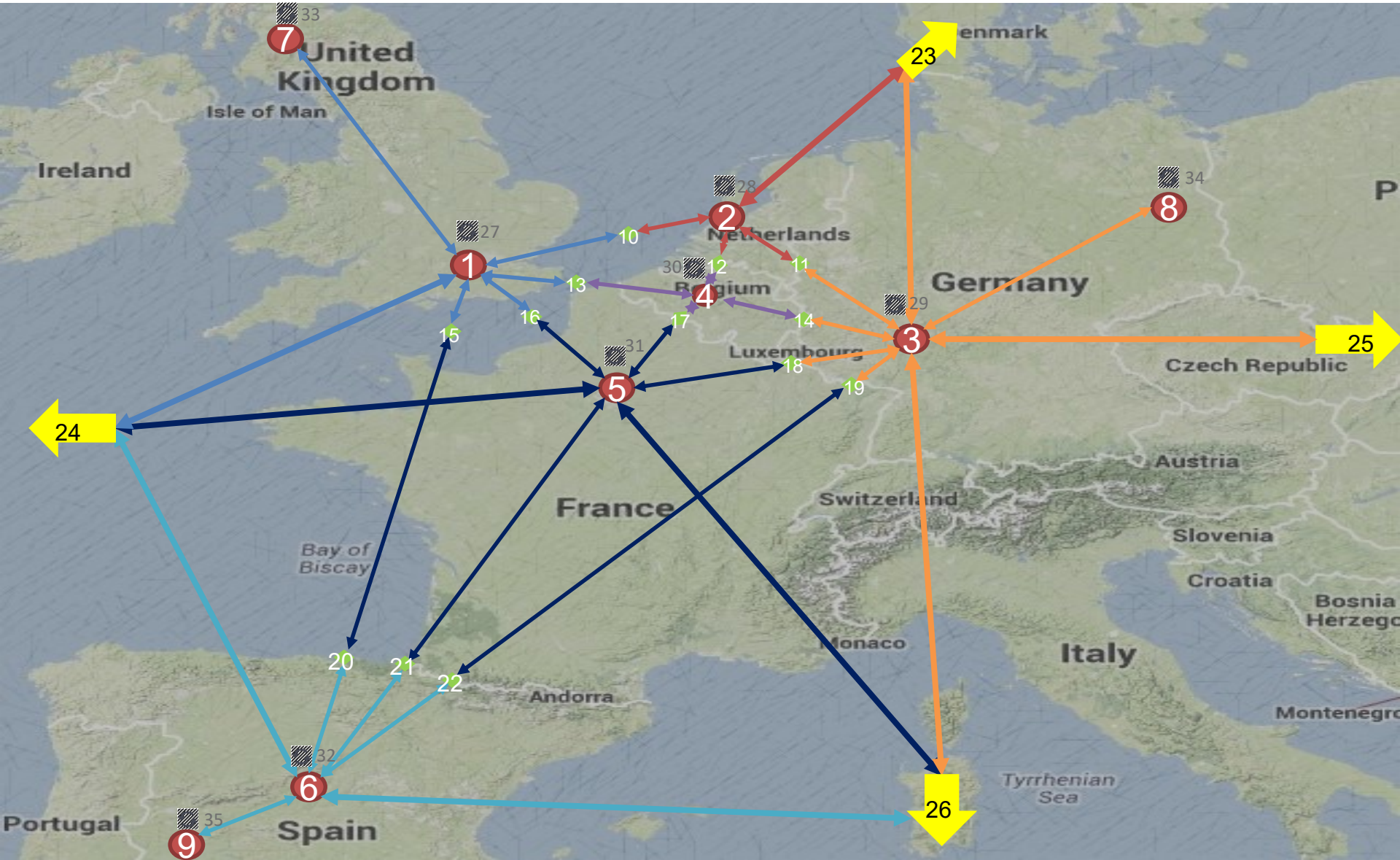
UK experience is documented best

- UK has a competition tradition
- Civil Aviation Authority is responsible for cost-efficiency targets (EU-SES regulation for 7 largest airports) – that can be avoided if there is “enough” competition for tower services
- There was no legal monopoly for tower services but the incumbent did not like competitors
- Ownership of equipment (incumbent, airport) was not sufficient to block competition
- High share of ATCO’s with very generous terms (salary, pensions) was also not blocking the market opening – as they were employed by the newcomers at unchanged conditions, new ATCO’s had less beneficial conditions
- Almost all airports that did not organize a tender renegotiated their contract with the incumbent supplier and this may be as important as the tendering itself

Game – tree for institutional analysis: Mapping of the decision process



Case Study of liberalising ATC in Western Europe – auctions organized per country



Players + Cost structure

- U.K. Netherlands ,Germany, Spain, Belgium, France (>50% ATC)
- Cost structure for each ATC
  - Limited scale economies for two bordering countries
  - Can adopt new technologies that cut costs by 50%
- **5 Airlines that choose routes**
  - 3 alliances:
    - Star (Lufthansa)
    - Oneworld (BA)
    - SkyTeam (AF-KLM)
  - Low cost carrier (EasyJet)
  - Unaligned carrier (Emirates)

Results competition game for the ATC market

Ownership form

- Without tenders:
  - Non-profits provide highest capacities
    - utilize technologies & high labour levels
    - prices close to price caps
  - For-profits create capacities similar to current levels
    - utilize technology with lower labour levels
    - prices = price caps; profits of 25%
- WITH tenders:
  - Leads to 3 companies serving 6 airspaces in case study
    - Permits defragmentation of European airspace
  - Prices halved
  - For-profits set higher prices & lower capacities than non-profits

Conclusions

- Present regulation has benefit of gathering well structured information
- Organizing (“forcing”) competition is a more efficient alternative than price regulation
- 1st step: EU forces every country to allow airports to organize an auction for tower control
- 2nd step: auction en route control

Sources

ACCHANGE project (2013-2015)

http://www.tmleuven.be/project/acchange/home.htm

COMPAIR project (2016-2017)

http://www.compair-project.eu/publications.html

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Presentations (COMPAIR website)

COMPAIR

Thank you very much for your attention!

This project has received funding from the SESAR Joint Undertaking under the European Union's Horizon 2020 research and innovation programme under grant agreement No 699249

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