Economic regulation within the framework of the implementation of the Single European Sky

Regulatory Policy Institute

Outline

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- Contractualisation and service provision
- Co-ordination and infrastructure management
- A proposed general framework for risk/reward allocation
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- Options for ATM charging structures
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Objectives, responses, next steps

- Objectives:
  - Study driven by the Commission's requirements in relation to the drafting of implementation rules: necessarily 'high level'
- Responses:
  - Significant degree of consensus on major issues and trade-offs
  - Necessity of further, more detailed work
  - Lack of enthusiasm for bureaucracy and centralisation (but are the two being conflated? -- e.g. infrastructure management).
- Next steps:
  - Commission: implementation rules
  - ANSPs, airlines, regulators, etc.: detailed work on ways forward

Initial reviews: the current structure of provision

- To clarify discussion we distinguish operational airspace blocks (OABs) and airspace charging blocks (ACBs)
- These are not necessarily identical in scope, and a number of issues concern the efficient configuration of each
- Efficient configuration is constrained by history (national boundaries) and weak/disjointed regulation
- European Single Sky: address the constraints to facilitate efficient, future developments
- No 'magic solution' (e.g. mandated ACBs): requires progress on a range of regulatory issues

Initial reviews: best-practice regulation

- Developments in other sectors of note include:
  - Recognition of the centrality of risk/reward trade-offs
  - The near universal tendency to ‘hybrid’ approaches (neither cost-plus nor RPI-X) to the allocation/determination of risks and rewards
  - Liberalisation is transforming the ‘demand-side’ of network markets, making them more like ATM
  - The increased role of network users in the processes of regulation and of network/market governance
  - Increasing importance of service quality and investment issues
  - Unbundling of co-ordination functions, in both the short-term and the long-term (‘lean’ central functions, or ‘residual’ natural monopoly)
  - Evolution of system operators/network managers to undertake these central functions

Contractualisation and service provision - I

- Introduction
  - Consistent with developments in other network industries
  - Growing interest in contractualisation in ATM
  - In particular, significant concerns expressed regarding adequacy of existing forums such as Enlarged Committee for stakeholder participation/input
  - BUT: Number of key issues remain unresolved as to what form contractualisation might take

- Potential Options - (i) SLA's or private agreements
  - Important practical difficulties in implementing commercial contracts - significant and complex network effects

Contractualisation and service provision - II

- Potential Options - (ii) Contractualisation within a regulatory framework
  - Table 4.1 presents a ‘stylised’ framework in the form of a number of steps (which allows for differences in regulatory approach between countries)
  - List moves from a situation where service providers are faced with requirements regarding process, to a situation where they may have externally determined financial incentive arrangements linked to specific levels of performance
  - Need to consider which of the steps identified in the table could be most effectively implemented at a European Level and which should remain at discretion of member states.

- Contractualisation & EUROCONTROL
  - Seems appropriate that similar processes of scrutiny be directed a EUROCONTROL’s service provision as being proposed for ANSPs

Contractualisation and service provision - III
Other potentially desirable institutional developments

- The form and extent of ANSP disclosure of information requirements and the enforcement of compliance with these requirements
- Introduction of a forum for dialogue between users and providers on key cost and service quality issues
- Development of review/advisory bodies to independently evaluate indicators and performance
- Use of investment plans/statements by ANSPs that allow for both internal and external assessment/scrutiny

Co-ordination and infrastructure management I - System Operation

- Context
  - One of primary objectives of SES is greater harmonisation and interoperability through more efficient management of traffic flows
  - A number of major studies/stakeholders have identified problems with current ATFM process
- Potential for European ATFM Network Manager
  - Responses indicated a concern with overlap with role of CFMU
  - *Passive*: functions are collecting, formatting and transmitting information
  - *Active*: functions extend to actively managing constraints on the network
  - More scope for benefits from greater co-ordination at European level than in other cross-border networks (rail/energy) given the relative importance of cross-border traffic

Co-ordination and infrastructure management II - Infrastructure co-ordination

- Background
  - Another objective of SES to provide for greater co-ordination of infrastructure decisions at different points of the network
  - Limitations of current system include : lack of cross-border compliance/ enforcement mechanism; difficulty in reconciling national & European forecasts of capacity; unclear who 'owns' forecasts; problems of cross-border financing
- Potential improvements
  - Development of common ATM infrastructure standards
  - European infrastructure oversight body
    - role in collecting & analysing information to identify areas of beneficial development
    - potential role in co-ordinating finance between member states and other external sources
    - could be a relatively 'lean' and modest organisation with well defined roles

Co-ordination and infrastructure management III - Infrastructure financing

- Creation of infrastructure fund
  - Draft regulation provides for charges to be used to benefit collective projects
  - Potential for inefficiency if either a 'surcharge' on users is introduced or through contributions of member states because of danger of potentially detaching the funding of these projects from beneficiaries
  - Highlights a role for a European infrastructure oversight body to identify and obtain finance for cross-border projects as they arise
- Potential alternative sources of finance
  - European Community funding for trans-European networks (competitive)
  - Public/Private partnerships
  - Project finance using capital markets (again, highlights potential role for European infrastructure oversight body)

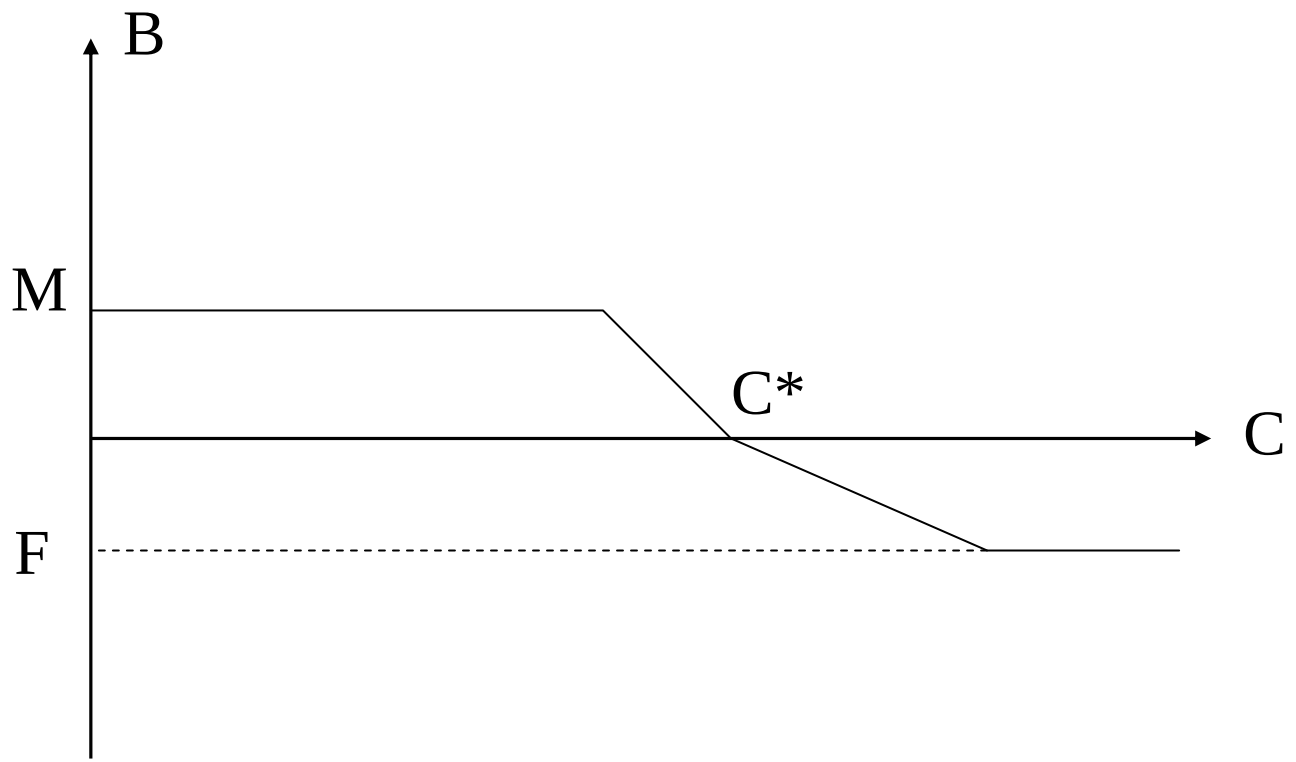
General framework for risk/reward allocation I

- Two apparent sources of problems:
  - The allocation of risk between users and providers, particularly risk associated with traffic volatility
  - Charges based on cost pass-through tend to lead to inefficiency
- Often considered separately: for example, focus on risk leads to evaluation of:
  - Profiling of costs/charges over time
  - Charge smoothing via dedicated funding mechanisms
- However risk allocation issues cannot be separated from the general evaluation of charge evaluation
  - Trivial example: risk allocation under RPI-X is very different from under cost-plus

General framework for risk/reward allocation II

- Propose a ‘benefit-sharing’ framework for charge determination in Europe
- Various existing approaches to charge determination are ‘special cases’ (pure price-cap and pure cost-of-service are extreme/boundary cases)
- Examples of ‘hybrid’ (non-boundary) implementations include: ANS in NZ, telecoms in USA, and electricity system operations in UK
- Some harmonisation of specific implementations can be achieved (if desired) by constraining parameter ranges

General framework for risk/reward allocation III



General framework for risk/reward allocation IV

- In relation to (cost) risks:
  - These are shared in the neighbourhood of the performance 'commitment' (C*)
  - At more extreme outcomes, cost pass-through loads the risks on to users (as now)
- Possible case for supplementary profiling measures?
- In any event, since actual and forecast out-turns are rarely identical, some supplementary adjustment mechanism is needed, and this will necessarily influence charge volatility
- We have suggested a Revenue Recovery Imbalance Account, which can be similar in form to benefit sharing

Charging structures: principles and issues I

- High level criteria:
  - Cost-reflectivity
  - Non-discrimination
  - Transparency
- All require some interpretation:
  - Short-run vs long run, average vs incremental
  - How does this differ from cost-reflectivity? When is discrimination 'undue'?
  - What degree of transparency
- Relate back to fundamentals: efficiency, including dynamic vs static trade-offs, competition, and practicality

Charging structures: principles and issues II

- Most obvious factors in charging structure:
  - **Distance.** Unambiguously satisfies the high-level criteria
  - **Weight.** Not cost-reflective, but a potentially efficient means of recovering 'fixed' costs (ability to pay). Modest changes in the exponent would have little effect on economic efficiency, but could be used as a 'balancing' factor to negate unwanted distributional changes in other factors.
  - **Fixed costs.** Problems of cost-reflectivity and discrimination if charged per flight per national territory ('pancaking'). Satisfies high-level criteria if charged per km or (better still) at points of origin and departure only. The last of these options could be developed via modification of existing terminal charges.

Charging structures: principles and issues III

- Other factors that might be considered:
  - **Altitude.** Has some relationship to costs, but likely dominated as a proxy for costs by other alternatives (e.g. origin and departure points). Practical issues if charged in a cost-reflective way (complex charging structures). If simplified (e.g. higher/lower) there is loss of cost-reflectivity and issues of discrimination and of effects on competition are raised.
  - **Time of day/year (peak/off-peak charging).** This has obvious pluses in terms of cost reflectivity, and is widely used in other networks, but other matters probably of higher priority in the near future. The immediate issues are more to do with practicality and priorities.
  - **Congestion and environmental factors.** Similar remarks to peak/off-peak pricing.
- Peak/off-peak, congestion and environmental factors are probably matters to be revisited over the longer term, rather than an immediate priority.

Options for ATM charging structures I

- Current structure of charges (terminal plus en-route based on weight-adjusted distance) is a reasonable base.
- Principal problems arise from non-harmonised implementation. In particular, there is lack of harmonisation in the terminal/en-route division and in the way in which terminal charges are determined (see PWC)
- Three suggested improvements:
  - Formalisation into origin/destination/distance components
  - Origin and destination charges determined by all costs driven by take-offs and landings
  - Harmonised constraints on the revenue division between distance charges and origin/destination charges

Options for ATM charging structures II

- Other options are better seen as potential *supplements* to a reformed origin/destination/distance (or gate-to-gate) charging structure, rather than as alternatives
- To date, these other options (e.g. upper/lower airspace differentiation, charge differentiation by ACC), do not appear to have been studied in this way (as supplements to reforms of the origin/destination/distance structure). Evidence of their implications for efficiency/performance and for competition is lacking
- They also currently lack both firm theoretical foundations and support from providers and their customers

Options for ATM charging structures III

- Well constructed charging structures can be expected to have a supporting, but nevertheless useful, role in guiding future developments in ATM.
- Our general view on charging structures is that there is merit in developing existing arrangements in ways that reflect costs associated with airspace complexity by means of origin and destination charges (i.e. reformed terminal charges), which should be set according to principles that will ensure greater consistency throughout the European network.
- Further refinements of charging structures are probably left to evolutionary developments resulting from the interactions between providers and users, subject to ‘high level’ principles

Conclusions on priorities

- In seeking to promote the efficient development of the European ATM network, greatest reliance should be placed upon the pressures that can be brought to bear on the structure and performance of service providers from a combination of economic regulation and the more active involvement in network governance of users.
- In relation to charging, the key to progress most likely lies in the application of regulatory approaches such as that embodied in the benefit-sharing proposals set out in this Report, which are targeted at influencing the average level of en-route charges, the incentives faced by service providers, and the distribution of risk between service providers and users.
- These conclusions are consistent with experience of economic regulation in other sectors.