Delay Reduction Service in the ATM

Chunan Wang[*1]

[1]Toulouse School of Economics (TSE) – Toulouse School of Economics – Manufacture de Tabacs, 21 allées de Brienne 31000 Toulouse, France

Résumé

The new generation ATM system defined in SESAR gives air navigation service provider (regulator) the possibility of providing a delay reduction service to reduce delays. In this context, this paper studies the optimal design of delay reduction contract signed between a regulator and a monopoly airline. This paper first builds a model which fits characteristics of EU air transport sector. Specifically, a new delay function including both exceptional event and congestion delay captures that unlike US, in EU, there will be no delay if no exceptional event happens. Moreover, the fixed number of flights captures grandfather right and "use it or lose it" rule in EU slot allocation mechanism. Then, this paper derives optimal contracts analytically mainly under two scenarios, that is, the regulator provides the service with or without using public funds. Furthermore, because contracts should be adjusted over time according to the evolution of some relevant exogenous variables, for instance, safety standard and passenger's value of time, this paper conducts comparative-static analysis to determine their effects on optimal contracts, in which information rent is found to increase the possibility that contracting variables move in opposite directions. Besides, this paper also uses numerical examples to gain some insights.

[*]Intervenant